HEALTH EDUCATION

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HEALTH EDUCATION

A Guide to Principles and Practice

By

CYRIL BIBBY

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GIRLS COLLE

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To the memory of

MICHAEL ROBERTS

who put principles into practice

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PREFACE

> Happy they who are engaged in provinces of thought, so familiarly traversed and so thoroughly explored, that they see everywhere the footprints, the paths, the landmarks, and the remains of former travellers, and can never step wrong; but for myself, Gentlemen, I have felt like a navigator on a strange sea, who is out of sight of land, is surprised by night, and has to trust mainly to the rules and instruments of his science for reaching the port.
>
> Newman. *The Idea of a University*, IX.

In many parts of the world, health services have been improved out of recognition during the past century and, to varying degree in different countries, the prevention of disease and the maintenance of health have become recognised as prime functions of the States. Yet, in a democracy, State provisions are never enough, whatever their excellence. Each citizen must also have an intelligent appreciation of the social situation and a feeling of individual responsibility for its improvement. Which means, in this context, that health service must be matched by health education.

It is, therefore, not surprising that recent years have seen a marked intensification of interest in health education. For decades the schools and teachers' colleges have given lip service to "hygiene," but now many have followed the few in equating practice with precept, and most are moving in that direction. Those responsible for the training of doctors and nurses are likewise recognising the importance of health education, and central and local government departments are doing all they can to promote it.

In these circumstances, there is a need for a study of the principles underlying health education and the problems arising in its practice, and this book is offered in the hope that it may go part way to meet this need. Despite its failings, it seemed better to publish this guide now than to await indefinitely the date (which, like a mirage, has already receded over several years) when all its imperfections and inadequacies might be removed. If, however, readers will be kind enough to send me their criticisms, it should be possible to remove some of the blemishes in future printings.

It ought perhaps to be stated here what would in any case be apparent from a reading of the book, that this is no manual of hygiene. There are already available several excellent books dealing with the facts of *health*: this volume deals primarily with *health education*. Nevertheless, some of the central facts of health, particularly in those areas in which there has been some confusion

or which have shown important recent advances, have been incorporated for convenience of reference. It is hoped that this combination of material and method will make the book of value to parents, teachers, doctors, nurses and social workers and to all who have to carry out or make decisions relating to the health education of the individual or the community.

It is difficult to make adequate acknowledgment to all who have contributed to the book, for they are so many and their help has been so great.

Miss E. F. Brackenbury, Dr. D. M. Cadman, Sir Allen Daley, Dr. Charles Hill, Dr. Leslie Housden, Dr. A. G. Mearns, Dr. Stephen Taylor and Miss W. M. Warden read sections dealing with matters of which they have special knowledge ; Mr. Richard Palmer criticised the whole of the manuscript and Professor H. S. Hoyman the whole of the proof ; Drs. F. Cronin, K. S. Richard and J. S. Ross summarised for me their observations in general practice ; Miss Freda Jolly helped with the detailed work of preparing the appendices ; while Dr. J. Fischer and the officials of various Embassies, High Commissioner's Offices and Ministries went to much trouble in gathering accurate and up-to-date information about health education agencies in their respective countries. Finally, there has been the penetrating criticism made by Mrs. F. M. Bibby at each stage of the writing over a period of years.

To all these, and to others unnamed (including the children and students who have disabused me of many pet notions), I give sincere thanks, whilst emphasising that responsibility for any inadequacy or error is mine alone.

CYRIL BIBBY.

Chipping Barnet,
Hertfordshire, 1951.

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CONTENTS

PAGE

PREFACE vii

CHAPTER I. AIMS

A Century of Change ; The Definition of Health ; The Desirability of Health ; Education for Health 1

CHAPTER II. ASPECTS

Providing Assumptions ; Inculcating Habits ; Imparting Information ; Fostering Attitudes ; Inspiring Ideals ; Need for Further Study 7

CHAPTER III. FACTS

Nature and Nurture ; Growth and Development ; Sex and Reproduction ; Nutrition ; Drinking and Smoking ; Exercise and Rest ; Sun and Air ; Disease ; Home and School Environment ; Safety ; Special Organs ; Mental Health 17

CHAPTER IV. MEDIA

The Environment ; the Spoken Word ; Printed Material ; Film and Film-strip ; Radio and Television ; Mechanical Aids and Exhibitions ; Exercise of Discrimination 46

CHAPTER V. HOME

Early Assumptions ; the Basic Habits ; Table and Toilet Training ; Play and Sleep ; Health Instruction ; The Home's Achievement 56

CHAPTER VI. SCHOOL

Programme Planning ; Curriculum Building ; The Primary School ; Need for Moderation ; the Secondary School Curriculum ; Theory and Practice ; Periods for Health Education ; The Handicapped Child 67

CHAPTER VII. COLLEGE

Parents ; Educational Workers ; Health Workers ; Religious and Social Workers ; Creating Cadres 90

CHAPTER VIII. COMMUNITY

Surveying the Ground; Central Planning; Local Planning; Seasonal Relevance; The Child; The Adolescent; Adults; Social Groupings; The Health Educator 105

APPENDICES

I. AN ONTOGENETIC SCHEME FOR HEALTH EDUCATION 125

II. HEALTH EDUCATION THROUGH CURRICULUM SUBJECTS 132

III. LINKAGE OF THEORY AND PRACTICE 139

IV. USE OF MEDIA FOR A CENTRALLY PLANNED HEALTH EDUCATION CAMPAIGN 141

V. ORGANISATION OF A LOCAL "HEALTH WEEK" 144

VI. SEASONAL PLANNING OF A HEALTH EDUCATION PROGRAMME 147

VII. DRAFT SYLLABUS FOR A QUALIFICATION IN HEALTH EDUCATION 150

VIII. DIRECTORY OF HEALTH EDUCATION ORGANISATIONS 155

IX. SOME USEFUL STATISTICS 166

X. SELECTED FILMS AND FILM-STRIPS 196

XI. BIBLIOGRAPHY 201

INDEX 214

CHAPTER I

AIMS

"Would you tell me, please, which way I ought to go from here?"
"That depends a good deal on where you want to get to," said the Cat.

Carrol. *Alice's Adventures in Wonderland, VI.*

THE health and education of the people are to-day regarded as among the prime functions of government, but this view is a fairly recent one. In earlier days the State was not concerned with popular health and, indeed, very often left quite untouched the grossest abuses of it. It is not surprising that, in the process of rapid industrialisation and urbanisation of our country, the health of its people reached an extremely low state. It has been estimated that, from 1791 to 1831, the population of England and Wales grew from about nine to about fourteen millions—that is, an increase of about sixty per cent. in two generations. Herded together in the newly spawned monstrosities of the industrial towns, over-worked and under-nourished, rat-ridden and sewage-tainted, the people died like flies. The death rate in 1838 was over twenty-two per thousand of the population, and the expectation of life of a child born in Liverpool was a mere twenty-five years. Since the dissolution of the monasteries the care of the people's health had become nobody's job, and the best that a poor sick person could hope for was some grudging aid under the still lingering Elizabethan Poor Law.

A Century of Change

Eventually, however, the repeated waves of cholera and other pestilences, the rising discontent of the working classes, and the noble endeavours of a few pioneers forced a change. The Poor Law was amended, Royal Commissions were appointed and reported, machinery was set up for the collection of vital statistics, a General Board of Health was established and eventually the Local Government Board (out of which grew the Ministry of Health) set up, Public Health Acts were passed and a local health machinery constructed. Gradually pure water was supplied, sewage and scavenging schemes elaborated, the most purulent slums cleared, and notification and vaccination systems provided.

As a result of these legal and administrative changes, the last century saw a quite remarkable improvement in the health of our people. Even a cursory comparison of the relevant vital statistics

for, say, the latter half of 1837 and the same period of 1937 makes this very clear. These figures show that during the century the total death rate has been nearly halved and, in the case of people between one and thirty-five years of age, approximately quartered. Whereas nearly six thousand people died of smallpox and over nine thousand of the typhus-typhoid group of infections in July-December 1837, in July–December 1937 there were no fatal cases of smallpox and, in proportion to the 1837 total population, fewer than fifty deaths from typhus, paratyphoid and typhoid. During the same period the proportionate incidence of measles, scarlet fever, etc., fell to less than four per cent. of the 1837 figures, and of whooping cough to seven per cent. No longer are we scourged by great plagues of cholera and the like, and there is sometimes a resulting tendency to complacency.

We have, however, no cause to be complacent. In 1938 about half a million people died in England and Wales and, of these, nearly half died of various forms of heart disease, cancer, and respiratory infection. Deaths from these diseases come mainly to the over-forty-fives, showing that, despite the dramatic reduction in the death rate of the younger age groups, there is still a long way to go in dealing with the diseases of older persons. While we also still have over a hundred thousand new cases of tuberculosis in a year, largely among younger people, and a quarter of this number of deaths, we cannot be content. There are some infections, moreover, such as poliomyelitis (infantile paralysis), which seem to be on the increase ; while there seems little doubt that the incidence of mental illness is increasing considerably.

The Definition of Health

Were we to confine attention to statistics of death and gross illness we might, nevertheless, feel quite pleased with our present condition, at any rate in comparison with the position a century ago. It is becoming increasingly clear, however, that not being really ill is not the same as being really well, and there is yet a vast mountain of mild sub-health to be removed. Although it is true that a decreasing death rate and an increasing expectation of life indicate in general terms better community health, they give no accurate picture. People may, as a result of improved sanitary conditions, die off less easily and drag out a longer existence ; but merely failing to die is far short of living a rich life of abundant vigour, serenity and joy. The Pioneer Health Centre at Peckham showed that, although only about twenty per cent. of its members knew that they had something wrong with them, another seventy per cent. or so had some disorder of which they were quite unaware. This means that our people have become so used to a state of sub-

health that they do not recognise it as less than perfect. Minor disorders, such as digestive troubles, constipation, varicose veins, neuralgia, anæmia and defects of eyes, ears and teeth, are passively accepted as part of the unregarded lot of life. The average level of health has come to be regarded as the optimal, but until the average *is* the optimal, we cannot be completely satisfied. We have added years to life ; what is now needed is that we should add life to the years.

One difficulty about this concept of " positive health " is that, while we have morbidity statistics which give a picture of the degree of illness of a community, we have as yet no means of measuring the community's degree of health and vigour. Even to measure the degree of health of an individual in any terms other than the absence of defect and disease is difficult ; but, while perfect health cannot easily be defined, the healthy person has certain characteristics which may be fairly readily recognised. He has a sense of general fitness and of competence and joy in bodily movement ; he finds exercise enjoyable and relaxation and sleep come easily when he is tired ; he has a hearty appetite and easy elimination ; his height and weight in most cases do not vary widely from the normal ; he is able rapidly to adjust himself to variations in climatic and other environmental conditions ; and, until he becomes poorly, he is hardly aware of the functioning of his body. His intelligence is adequate to the needs of daily life and his mental processes go on smoothly and efficiently ; he is generally happy, self-confident and co-operative ; he is not unduly troubled by worries, fears or other emotional difficulties ; and he rarely wonders whether or not he is healthy. A person without these or similar characteristics cannot be said to be really healthy, even if he has had no aches or pains serious enough to send him to a doctor.

One facet of the generally increased attention paid during recent years to the people's health and education has been a growth of interest in the possibilities of education for health. National and local government departments and voluntary and professional organisations have all arranged conferences and published booklets on health education, but rarely have the very real educational problems involved been clearly recognised and exhaustively analysed. Too often enthusiasm has been regarded as a substitute for serious study and it has been tacitly assumed that health education, usually of an ill-defined nature, will unlock all the doors to health.

The Desirability of Health

Any claim for health education clearly depends for its strength upon the validity of two propositions : first, that health is a desir-

able objective ; and second, that education can help towards the attainment of health. Both propositions may appear fairly self-evident, yet it is worth while to subject them to examination.

Why, then, be healthy ? This apparently simple question is capable of, and has in different historical periods received, many different answers. In Britain, until recently, those who have been responsible for fostering the health of the people have clearly regarded health mainly as a necessary means to other ends. Thus, in the nineteenth century, public health reforms bore very clearly the stamp of their dual purpose : that of protecting the few from the pestilences rife among the many, and of reducing as far as possible the burden on the poor rate. The achievement of this double purpose necessitated measures to improve the health of the masses of the population, but this popular health was a means rather than an end. Similarly, in more recent times, many of the longer-sighted employers have sought to improve the health of their workers, not out of disinterested regard for their well-being, but as a means to the end of greater industrial efficiency. During the last few decades, also, much of the advance which has been made in child health has been largely due to the continuous campaigns run by teachers who, at any rate initially, were concerned to improve the health of their pupils as a means to the end of greater educability. Others (and this applies to much of the "health and cleanliness" type of propaganda) have regarded health primarily as a means to æsthetic ends ; while yet others have promoted health as a means to the end of victory in battle.

Of recent years there has been a widespread development of the conception of health as not merely a means to some other end, but an end desirable in itself. This is the conception behind the "health and strength" type of propaganda and is, even if unconsciously, the belief motivating many of those who go rowing, running and swimming with great devotion or who play vigorous games regularly or attend formal physical training classes and perform daily exercises before breakfast. To this school, health requires no justification, for it is its own end.

Each age must make its own assessment of the reasons why health is desirable, and such an assessment will depend on many political, social, educational and philosophical considerations. To-day, the popular health is no longer sought primarily as a means to the insulation of the wealthier classes from disease ; while one would hope that the achievement of military prowess might also become less desired. We must, however, continue to attach importance to health as a means of industrial efficiency. The economic loss to Britain by ill-health was estimated in 1937 at over £300,000,000 per annum, which is much more than we can afford. Moreover, good

health is desirable in that it makes education easier, and, although the grosser cases of child malnutrition are now rarely met with, all teachers know that much remains to be done before the health of their pupils ceases to be a limiting factor to their education. Æsthetic appreciation is perhaps the most uniquely human of all our characteristics and the link between health and æsthetics should therefore be greatly strengthened. Finally, overbrimming health produces (or is accompanied by) a glorious feeling of well-being and is certainly, to that extent, an end desirable in itself.

Yet all these ends are fragmentary. However highly we rate health, we yet recognise that there are circumstances in which we should wittingly sacrifice it for something higher. The nature of this " higher " something differs according to the individual's social, religious and philosophical beliefs ; yet the mere recognition of its existence implies that health is not unconditionally desirable. In the last resort, health can be accounted as good only in so far as it is an integral part of a good life. It is desirable only in so far as it enriches the personality and opens up the possibility of the achievement of better works.

Precisely what constitutes the good life and the better works and the richer personality is a matter upon which opinions may differ, yet one or two things seem clear. Our aim must be not mere absence of gross disease or disability, but positive health overflowing in joy and vitality. Nothing is good enough except the very highest health of which each individual is intrinsically capable. Our aim must include mental health as well as physical for, despite all differences of opinion, we can agree that the good life is not that of the sanitary moron. We are learning to discard that disastrous cleavage between " mind " and " body " which has bedevilled western thought for so many centuries ; for, whatever else it may or may not be, the good life is certainly a unity. Since, moreover, we are members one of another in families and larger social units, our aim must include not merely the health of the individual but also that of the family and of society as a whole.

Education for Health

About the second proposition, that education can help towards the attainment of health, not a great deal can be asserted with complete certainty. The health of an individual depends on many factors and only some of these can be directly and immediately influenced by educational procedures. First comes hereditary endowment, which education can influence only very remotely (and that only for future generations) by the building up of what might be called a " eugenic conscience." Next come environmental factors such as food supplies, sewage and refuse services, conditions

of work and housing, which, while they may be improved gradually as a result of widespread education, depend more immediately upon general economic, social and political conditions. The quite common assumption that the enormous improvement in the health of our people during the last century was brought about by popular appreciation of health necessities is false. The provision of pure water supplies and efficient sewage systems, the control of food purity, the compulsory registration of certain diseases, and like measures, have been due largely to socio-economic necessity and the wisdom and administrative efficiency of a small minority. It seems likely, in fact, that it is only when the blackest spots on the public health have been cleared up by the vigorous action of the already enlightened few that the best results can be obtained from the further health enlightenment of the many.

In the technically more advanced countries this stage has now been reached. Most of the essential public health framework has been erected and the building can be completed only by popular co-operation. No law can make a mother rear her child intelligently or a father play his full part in the home. No sanitary inspector can see to it that each individual washes his hands before touching food and refrains from scattering germs about a public vehicle. These refinements of behaviour cannot possibly be effected by other than educational means. The building up of a public health conscience, moreover, can provide that impatience with existing conditions which acts as a spur to their improvement.

It has, admittedly, not yet been clearly demonstrated on a large scale that health education in the formal school system produces measurable results in health achievement, but it probably does. Moreover, no one who is aware of the improvement in child rearing during the last two decades can doubt that the informal guidance of the maternity and child welfare service is already paying handsome dividends. The success of the diphtheria immunisation and other government-inspired health campaigns is also a testimony to health education. Education can, it seems, do much to improve personal habits of hygiene, to impart knowledge of health facts and to stimulate health ideals, thereby helping the individual to develop the highest standard of health possible within the limitations imposed by his heredity and his material and social environment. Thus, although the effectiveness of education as a means of achieving health may still be largely a matter of faith, it is an eminently reasonable faith and one in which we must effect our works.

CHAPTER II

ASPECTS

> Let our artists rather be those who are gifted to discern the true nature of the beautiful and graceful ; then will our youth dwell in a land of health, amid fair sights and sounds, and receive the good in everything ; and beauty, the effluence of fair works, shall flow into the eye and ear, like a health-giving breeze from a purer region, and insensibly draw the soul from earliest years into likeness and sympathy with the beauty of reason.
>
> Plato. *The Republic*, III, 401 (Jowett's translation).

It appears to be a fairly widespread delusion that health education consists in imparting facts about health. A moment's thought, however, makes clear the inadequacy of this conception, for there is no necessary correlation between health knowledge and healthy living. One may know all about the virtues of physical exercise and yet live in sloth, be a very encyclopædia of sexual knowledge and yet have a thoroughly unhealthy attitude to sex, rank as an expert in epidemiology and yet spit in public places. The regrettable fact is that we do not always do those things which we know we ought to do.

If, then, man is not entirely a rational animal, basing all his actions on a calm appraisal of relevant facts, what sort of an animal is he? Certainly a very complex one, and one not easily categorised. Yet, whatever the risks of oversimplification, we must base our educational plans on some estimate of the nature of the people who are to be educated and who are to do the educating. It is, therefore, suggested as a basis for planning that at least five facets of human nature should be recognised and suitably provided for in educational schemes. Man is in part a creature of prejudice, drawing assumptions about the way life is lived from the nature of his material and human environment ; or, in other words, doing things because they are the " done things ". He is to a very marked extent a creature of habit, capable of considerable conditioning and doing things because he has often done them. He is somewhat a creature of reason, basing his actions on careful consideration of relevant knowledge or, differently expressed, doing things because they are the reasonable things to do. He is very largely a creature of sentiment, developing attitudes to his fellow humans, their activities and their institutions, and doing things consistent with his emotional make-up. And, perhaps most peculiarly human of all his attributes, he is in part a creature of rare refinement, capable of the purest æsthetic, ethical and spiritual appreciations, doing things because his finest self demands that they

be done. If some such view of human nature be accepted, its implications must be worked out and acted upon in every field of education.

In the particular field of health education, the implications seem fairly clear. Our children must grow up in an environment from which they will adopt the assumptions, and with a training which will help them to form the habits, conducive to healthy living. They must acquire the biological and other information which can provide justification for habits already formed and guidance in the choice of future actions, and they must be helped to build up those attitudes which form a healthy outlook on life. Finally, they must develop appreciations and ideals relevant to health. Each of these five aspects of health education needs to be considered in detail for every stage of the individual's maturation process, but something may be said in general terms.

Providing Assumptions

It is obviously desirable that the growing child should, beginning in the first months long before it can understand or utter words, take it for granted that people live in an orderly and rhythmic way, that people keep themselves and their surroundings fairly neat and clean, that people are friendly and helpful to each other, and that health is a normal and natural and joyous thing. Herein, of course, lies the whole science and art of parentcraft. Keeping children's activities in a regular rhythm is not in itself so difficult : the difficulty lies in introducing necessary variety into the rhythm without shattering it completely. Merely keeping children and their surroundings clean would present no difficulty other than the practical ones of the overworked mother : the difficulty lies in letting the children frequently enjoy getting themselves dirty without destroying their assumption that on the whole one is clean. And similarly, through the whole range of desirable assumptions. We have the difficult task of steering midway between those of the lout and those of the prig.

The best Nursery Schools show very clearly the way to provide children with desirable assumptions. The buildings are bright and attractive, well ventilated and well sunned. The teachers are charmingly dressed and the children in clean overalls. The rooms are gaily decorated, the gardens trim and cared for. All through the day there is the regular rhythm of cleaning teeth and washing hands, playing vigorously and resting quietly, helping to set meals and eating them without fuss, doing all one can for one's self and helping others with things they cannot do.

Yet how different is the picture in so many other schools ! It is not surprising that teachers often counter proposals for health

education with innumerable and scarcely answerable questions. How can children be expected to take it for granted that bodily cleanliness is desirable when there are two towels to two hundred children ? That order and rhythm are desirable when the school is so built that the changing of classrooms produces corridors like a railway station on a Bank Holiday ? That meals should be leisurely and dignified social occasions, when the gymnasium has to be used by children in two luncheon shifts ? Education authorities which ask their teachers to pay attention to the health education of their pupils (as most Authorities do and all should do) owe it to those same teachers to provide school amenities which will lead to the adoption by the pupils of the desirable basic assumptions (as all Authorities should do and few do).

Inculcating Habits

If these are the assumptions which should be provided, what are the habits which should be inculcated ? The term " healthy habits " has been widely used as a label for a bottle in which many very different ingredients have been mixed indiscriminately. Under the heading " habit " come procedures of divers natures and, unless their natures are clearly recognised and appropriate incentives devised, they are unlikely to be successfully inculcated.

First come those habits which consist in a disciplining of the natural functions, as of voiding, eating and mating. Whatever their early training, people would grow up to have meals, get rid of fæces and urine and have sexual intercourse : our task is to see that they grow up doing so in the appropriate places and on the appropriate occasions. That is to say, this type of habit training is essentially restrictive in nature and, since the simplest way to impose restrictions is by physical force or moral blackmail, we must be eternally on our guard against the temptation of the easiest path. Many a clean napkin is purchased at the cost of an anxious mind, many a table manner at the cost of a healthy appetite, and many a " pure " thought at the cost of a soiled attitude to sex. Nor is factual instruction of great value in the formation of such habits. No theoretical explanation is possible to an infant held on a pot : what is needed is gentleness and absence of emotional tension.

Quite different are the habits of bodily cleanliness, care of clothes, and so on. Few children are in any danger of washing their ears too frequently or in too lusty and unrestrained a manner. These procedures are the refinements of civilisation and they can be inculcated not by the disciplining of inborn reflexes, but by the building up of completely new, non-instinctive nervous paths. They are horses that need oats, not curbs.

The child must be given some incentive to carry out operations

which have no instinctual force and it seems likely that the most favourable periods for the action of such incentives are infancy and adolescence. In infancy one motive may be the gaining of adult approval, as when a four-year-old washes his hands before a meal and displays them to his parents for approbation. Another motive may be pride of achievement in motor co-ordination, as when the two- or three-year-old masters the mechanics of cleansing his teeth and assures all and sundry that he is " a big boy now." During adolescence new motives become powerful and, in particular, that of the desire to be regarded as adult and as attractive to the opposite sex. An astonishingly high proportion of boys scrub their necks and scour their ears with real enthusiasm for the first time in their 'teens ; while girls of a similar age characteristically take pride in their nails, their hair, their complexions and their posture. Properly guided and encouraged, this adolescent pride in appearance can be a most powerful and valuable motive in health behaviour.

Incentives of a rigidly " health " nature are not always either the most valid or the most effective. It seems, at the very least, doubtful whether a daily bath is necessary for good health ; but there is no doubt whatever that it can be good fun. Dentists are still at loggerheads about the health merits of frequent tooth brushing ; but clean teeth certainly look more attractive and feel more pleasant to the tongue than dirty ones. In this type of " health " habit, indeed, the æsthetic and hedonistic considerations may often be more weighty than the hygienic ; and our methods of habit training must take account of this. In the present confused state of dental knowledge, one cannot dispute the frequently reiterated statement that borax is as effective in cleaning the teeth as are the proprietary brands of dentifrice, but what child ever got as much fun from dipping a toothbrush in a white powder as from squeezing a lovely " oogy " pink ribbon out of a metal tube ?

All too often in the past, unfortunately, much so-called " hygiene " teaching has been of a dismally prohibitory nature, giving the impression that it is possible to be either hygienic or happy, but not both. Presented with such a false antithesis, any healthy-minded youngster will naturally and quite rightly choose happiness. We must therefore see that our health education avoids those dreary lists of " don'ts " and instead gives the true impression that health and happiness reinforce each other. There has, moreover, sometimes been a tendency to present health education as a sort of diluted medical education or popular pathology. We are seeking, however, to produce not pseudo-physicians but healthy citizens and, while some reference to the nature of various diseases will be necessary, the whole emphasis should be rather on how to keep well. We must encourage a feeling of joy in physical and mental

activity ; stress vigour, beauty, grace, strength, poise and efficiency ; and generally utilise happiness as an incentive to health.

Yet other "healthy habits" are in the nature of compensation for our artificial civilisation. Such are those of taking physical exercise, taking relaxation from the strain of daily work, giving our overworked eye muscles a chance to rest, and so on. They are not of major importance for the toddler and young child, who more often than not runs around as much as he wants, rests when he will, and uses his hands as much as his eyes. As children grow older, however, and still more as they pass into adult life, they increasingly fall victim to excessive close vision, nervous strain, and lack of exercise. This group of habits, then, is one requiring special attention in secondary schools and colleges.

Finally, let us not forget the healthy habits of the mind. Honesty of thought, some degree of scepticism, generosity, helpfulness, and so on—these mental habits tower in importance high above those detergent minuteæ of tooth brushing and skin scrubbing which occupy so large a part of the literature of health education. And probably the only incentive worth a fig in this field is the desire to live up to the standards expected by, and to earn the appreciation of, a parent or a teacher or a playmate who is loved and respected. Any pedagogue can teach about germs, but only a personality can teach consideration for others.

Before leaving this question of habits, it may be well to repeat what has often been pointed out, namely, that habit training must be specific. We cannot produce a habit of cleanliness in general : what we can encourage is the habit of washing a particular part of the body on certain specified routine occasions. We cannot produce a generalised habit of refraining from spreading communicable diseases : what we can do is to inculcate the specific habit of sneezing into a handkerchief. And so on. Yet so many adults still continue attempting the impossible, being under the delusion that such habits transfer readily to different circumstances, for which belief there is no real evidence. There may well be some slight degree of radiation, so that the child who has been taught to wash his hands regularly may wash his arms also as a matter of routine ; but on the whole it seems safer to work on the assumption that each specific habit, representing a sort of crystallisation around a provided nucleus of vague early-adopted assumptions about the way life is lived, must be inculcated separately.

Many teachers apparently hope to improve the health habits of their pupils without knowing what they are initially, as if one were to hope to follow a map without knowing whence one starts. It is, however, clearly necessary to be familiar with the starting point ; and this implies something in the nature of a health habit survey.

For this purpose the survey need not have the statistical validity of one intended as a research publication and it may well take the form simply of observation and apparently casual questioning of pupils. But, by one means or another, the teacher should learn how many and which of the pupils have satisfactory habits relating to eating, sleeping, taking exercise, washing, posture and avoidance of promiscuous coughing and sneezing.

It must be recognised, moreover, that it is not sufficient merely to tell a child in general terms that such-and-such a habit should be built : very often the contrary habit must first be cleared away. For example, a child who habitually sits with shoulders hunched up is not merely failing to sit correctly, but is also performing the positive action of sitting badly. It is unlikely that knowledge of the desirable posture will of itself lead to much improvement ; the circumstances which lead to the bad posture must be investigated. In so far as they relate to the material environment, the environment must be corrected ; in so far as they are simply habitual, the child's attention must be frequently drawn to what is desirable at the times when the erroneous habit is observed.

Any such observation of individual pupils requires for its most effective utilisation either a quite exceptional memory or an efficient record system and, since few have the former, most must make the latter. Into each pupil's record folder might go not only notes on his health habits, but a summary of medical examinations, observations on physique and energy characteristics, estimates of intellectual and emotional potentialities and difficulties, accounts of discussions with parents and of the home conditions, results of tests of health information and, indeed, anything that will help the teacher in making a " case study " approach to the children. Many teachers may reply that they have not the time for all this, and that it is all they can do to get ahead with the ordinary school work ; but, if the careful study and guidance of children is not regarded as the teacher's prime responsibility, the scale of values is sadly in need of readjustment.

While the importance of habit training cannot be questioned, it can be over-emphasised. Many of our daily actions are best carried out on the purely habitual, unconscious level ; but, if we are to be more than automata, our habits must be at least partly under conscious control. Individual and specific habits can take care of constantly recurring identical situations, but in fact life consists mainly of a stream of situations each containing some element of novelty. We need, therefore, ever-changing patterns of behaviour ; and such continual change can be effected only by the adaptation of earlier habit patterns as a result of conscious thought.

This implies that, at every stage of the educational process, habit

training must be accompanied by as much theoretical justification as possible, since only so can conscious thought be provided with the factual material about which to think. It is also important that habits should be knit into the whole way of life of the individual rather than being too closely connected with a particular type of environment or occasion, since otherwise one may find that health habits ingrained in the school are not practised in the home or that those taught with reference to kitchen cooking are completely neglected around the camp fire. This, in its turn, implies the need for the very closest co-operation between parents and teachers and, indeed, between all who play any part in the education of children.

Imparting Information

Since we do not wish our children to grow up as hygienic automata, merely pursuing with regularity procedures whose significance they do not understand, we must provide them with factual information on which their intelligences can get to work. The working out of exactly what knowledge is appropriate to each age is a matter of urgency, but much is clear enough in general terms. As they grow older, children should surely acquire at least a general knowledge of how their bodies work and how they may be kept healthy, of the maturation of the individual from conception on, of how diseases attack and how the individual and the community may counter-attack, of at least those simple vital statistics necessary to an intelligent reading of the local Medical Officer's Annual Report, of the effects of heredity and environment on health, and of the various health-promoting agencies of the community. None of this is beyond the capacity of that mythical creature, the "average" child, yet how many leave school having learned all this ?

In teaching the facts of health, it is important to avoid sterile dogmatism and rigidity. How often one hears about the "rules" of healthy living and how rarely about its principles ! We surely do not wish our children to grow up regulating each daily action by reference to some fixed sanitary code (and, fortunately, even if we did so wish, most children have too much healthy independence to do so). Whatever "rule" might be made, there would always be some individuals or some circumstances for which it would be invalid. What is always valid is the scientific principle and, if this is well taught, the individual must be left to adapt it as well as may be to each situation. To say that every child must consume a quart of milk a day is to fly in the face of biological idiosyncrasy and perhaps economic disability ; but to say that in general one should consume as much milk as possible is a valuable statement of principle. To specify a set number of hours of sleep as invariably necessary to a child of a given age is to risk the rapid development of indifference

in some children and of an almost morbid conscientiousness in others. But to suggest getting as much relaxation and sleep as possible, giving some indication of the usual requirements of particular age-groups and stressing that, if sleep is lost on special occasions such as parties, it should be made up later, is to encourage a general attitude of perennial value. To insist on certain arbitrarily defined standard postures is to neglect individual skeletal differences and neuro-muscular states ; but to encourage pride in efficient bodily movement is to raise the postural standards of each individual. To assume that a child of a given age " should " have a standard height and weight is to pervert the meaning of means ; but to take standard measures as a convenient guide to what might often be expected is to use such figures intelligently.

And so one could proceed through most of the so-called " health rules." In so far as they do not apply to a particular individual they are positively misleading ; while, in so far as they are applicable, they may tend to a thoughtless regard for rigidity of behaviour at the expense of intelligent flexibility and to unhealthy preoccupation with health at the cost of spontaneous joy in life. Let us teach the principles of healthy living and leave the rigid rules alone.

Fostering Attitudes

Perhaps even more important than people's factual knowledge of the body and its workings is their emotional attitude towards it. This comes out particularly clearly in the special field of sex education, where many most knowledgeable people have most unhealthy attitudes, but the importance of developing desirable sentiments applies to the whole area of health education. Briefly, these desirable attitudes may be summarised as regarding the body and all its functions as normal, natural and in no way intrinsically unclean ; looking forward in general to the enjoyment of good health as a birthright rather than as a thing to be dearly purchased by incessant hygienic ritual and frequent self-medication ; being interested in everything relating to health without being morbidly obsessed by pathology ; and feeling a sense of responsibility not only for one's own health but also for that of the world at large, while retaining a capacity for spontaneous enjoyment which responsibility cannot extinguish. It is, one recognises, easy to make general statements of this nature and difficult to work out their implications in detail, yet there is something to be said for locating the wood before setting about identifying the trees.

Inspiring Ideals

If a child growing to adult life has adopted assumptions conducive to healthy living, formed healthy habits, acquired relevant factual

information and built up appropriate health attitudes, much has been done and certainly more has been done than many people do, yet still not enough has been done. Something else is needed to fulfil completely the health potentialities of a mature human personality, and this " something else " is the development of ideals or appreciations. It is perhaps especially during adolescence that this aspect of health education can be most fruitfully pursued, for that is a period when superficial toughness invests a finely flowering idealism. Ruddy health can be appreciated as æsthetically desirable ; a fine body and a fine mind seen as not merely useful but as beautiful and good ; the personal relationationships between man and woman, between parent and child and between fellow citizens can be savoured in all their richness. This, the most spiritual aspect of health education, is certainly the most difficult to plan for, which is perhaps why it is the most neglected.

Since, however, we are unitary personalities and not pentapartite objects for the convenience of educators, these five main aspects of health education cannot be dealt with in isolation. At every stage each aspect merges into and interacts with each other, and the precise elucidation of the nature of this merging and interaction is an almost virgin field for research. Some faint glimpse of its nature may, however, be obtained by looking at the small specimen area of cleanliness. The growing infant adopts the assumption " people keep themselves and their surroundings clean." This assumption makes the toddler more amenable to training in the specific habits of washing his hands and cleaning his teeth. The child who assumes that people keep themselves clean and habitually cleans himself has an incentive to acquire information about germs and disease, and when he has acquired that information has a rational support for his better self when he is tempted to backsliding. All this provides a basis for the development of an attitude of distaste for dirtiness and slovenliness, while this attitude once developed will tend to encourage the earlier-formed specific " clean habits " to radiate out into a more generalised practice of cleanliness. Finally, the adolescent who dislikes dirtiness in general and practices cleanliness in general is likely to develop an æsthetic appreciation of a clean body, a clean mind and a clean environment ; while such an ideal of cleanliness provides the emotional drive and unifying force which can establish more firmly and extend more widely the narrower habits and attitudes already formed.

Need for Further Study

To build up a comprehensive scheme of health education* on such a basic skeleton as is outlined above is going to be a huge task,

* A first attempt at such a scheme is made in Appendix I.

and one probably beyond the competence of any single person. If, however, a group of educators were to set themselves to the task, each selecting a particular age-group (as infant, toddler, school beginner, pre-adolescent, adolescent, adult) or a particular area (as cleanliness education, sex education, food education) the job could be well done.

CHAPTER III

FACTS

> Youth should be awed, religiously possessed
> With a conviction of the power that waits
> On knowledge, when sincerely sought and prized
> For its own sake.
>
> Wordsworth. *The Prelude*, III, 390–393.

HEALTH education is a field in which the weeds of myth grow rank and it is therefore important for educators to learn all they can of the ascertained facts of health. Ignorance of such facts is responsible, for example, for the almost pathetic faith of many people in patented pills and for such myths as that piercing the ears cures short sight. More important than genuine ignorance, however, and much more reprehensible, is the occasional intellectual dishonesty of those who seek to persuade children that a puff at a cigarette will stunt their growth or a sip of beer leatherise the liver. And, perhaps most important of all in its ill effects, there is the quite common tendency to confine health teaching within the frontiers of physique, thus leaving much of the most important territory to the forces of prejudice and superstition. Therefore, while it is recognised that the detailed mapping of the whole wide field of health would need the co-operation of several specialists, an attempt is made here to present what is known or reasonably believed to be true of its main areas, with some suggestions of implications in health education.

Nature and Nurture

Basic to any full understanding of an organism is an examination of the interactions between its heredity and its environment, its nature and its nurture. Since humans breed slowly compared with most animals and cannot be mated according to the needs of the research worker, our heredity is as yet little understood. Yet enough is known to make it clear that hereditary factors play a most important part in each individual's growth and development.

Each human ovum and each human sperm contains in its nucleus twenty-four tiny "threads" or chromosomes, and these are believed to bear the hereditary factors or genes from the mother and father respectively. Thus the fertilised egg has forty-eight chromosomes, which divide longitudinally with each cell division, so providing each cell of the new individual with copies of this same set of forty-eight chromosomes. Hence, the whole functioning of

the body (and, since the nervous system and endocrine secretions provide their basis, of the mind and emotions) is deeply influenced by genetic factors. Since, however, the genes function not *in vacuo*, but in an inner environment of cell tissue as well as an outer environment, hereditary tendencies differ in their manifestation according to the environment in which they are manifest. Thus the popularly posed query whether a particular feature is due to heredity or to environment depends upon a false antithesis and cannot be answered : every feature depends upon both heredity and environment. Nevertheless, the hereditary element is so potent in some cases and the environmental in others that it is reasonable to speak of features as being " due to " heredity or environment, provided that it is realised that such a phrase is merely a convenient over-simplification.

There is every reason to believe that normal Mendelian principles apply in human genetics, but often in a rather complex manner. Some characters (such as syndactyly or joined digits, brachydactyly or short digits, polydactyly or extra digits, diabetes insipidus, Huntington's chorea, a form of defective tooth enamel, sickle-shaped blood corpuscles, one type of nystagmus, and some skin defects) are probably inherited as simple dominants—that is to say, they will be evident even if the gene for them is inherited from only one parent, while from the other parent a gene for normality is received. Other characters (such as one form of deaf mutism, juvenile amaurotic idiocy, diabetes mellitus, some urinary disorders, microcephaly or pin-head, a form of muscular atrophy) may be inherited as simple recessives—that is to say, they will be evident only if genes for them are inherited from both parents, for a single gene for normality prevents their expression. Some " sex-linked " characters, such as hæmophilia and a form of colour blindness, are normally confined in their expression to the male sex although they may be handed on by the female. Hæmophilia, moreover, provides an example of a defect which regularly crops up anew by mutation. In many cases a large number of genes may co-operate to control a single character such as stature ; in other cases a single gene may be responsible for several characters, such as blue sclerotics of the eyes, deafness due to defect of the ear bones, brittle bones and one form of heart disease. Thus, even when a character is known to be genetically determined, it is not by any means a simple matter to decide in what way it will be inherited.

It will be noticed that these examples of heredity are in the main of rather striking abnormalities, which is why they have been readily noted. About the inheritance of the health-influencing features of more normal individuals far less is known. It is evident that there are hereditary elements in immunity and susceptibility

to various diseases, in glandular functioning, in the state of the blood and its channels, in allergies, in intelligence and emotional characteristics, in assimilatory and excretory mechanisms, in almost all aspects of human functioning. The precise nature of these hereditary elements is not, however, known at all well. Until it is we shall in general have to be content with improving health as much as may be by means of environment. And, as is most strikingly shown by the many congenital defects which may be caused by German measles during pregnancy, and by Mongolian idiocy (which is believed to be brought about, at least in part, by some characteristic of the older woman) the pre-natal environment of the mother's body must not be neglected.

Growth and Development

There is no simple overall measure of health and, in an understandable desire to have some such criterion, physicians and physical educationists have often assumed that physical growth provided it. If it does so, it does so by no means simply. Each individual has his own hereditary growth pattern and this individuality of growth makes it most unsafe to make facile generalisations about what people of a given age " should " weigh or measure. Most of the published tables of so-called " normal " weights and heights are in fact only average figures, to which few individuals are likely to conform at all exactly. Marked deviations from these average figures do, none the less, justify reference of the individual to the physician for fuller examination, since there may be undesirable features in the examinee's nutrition, glandular state, environment or regimen.

Many growth studies show that different bodily tissues have markedly differing growth patterns ; the brain, for example, being nearly of full size by the age of seven years, while the heart is only half grown and the gonads scarce a tithe by the age of ten. Taking the body as a whole, however, there is a clearly marked pre-adolescent growth spurt, earlier on the average in girls than in boys, reaching its peak at between about ten and fourteen years, and leading to greater height and weight for girls than for boys between eleven and fifteen years. It is clear that growth is largely controlled by the secretions of the pituitary and thyroid glands, which influence not merely gross dimensions but also basal metabolic rate, sexual maturation, emotional state, and general personality development.

Special graphical methods have been devised for plotting the individual's growth measurements and, from these, more valuable information may be extracted by the expert. Similarly, special measuring devices (for arm circumference, chest depth, hip width, amount and quality of subcutaneous tissue, muscular efficiency,

degree of skeletal maturity and so on) increase the range and reliability of possible conclusions. But always the measurements are those of one person, and must be interpreted with reference to that individual's growth pattern rather than to averages. Clearly, therefore, care should be taken to avoid giving either children or adults the idea that there is anything either creditable or discreditable about being either large or small. What is important is that any genuine deficiencies be pointed out and corrected and pride be encouraged in a generally healthy condition.

Along with growth in bodily dimensions proceed changes in tissue states and proportions, as, for example, increasing mineralisation of the skeleton, increasing muscular content of limbs and decreasing relative size of head. Meanwhile, there is maturation of motor functions. Newborn babies have little control of their large muscles, but within a few weeks they can begin to raise their heads and in a few months can lift both head and chest. Gradually the child achieves control of the limbs and of the balancing muscles generally, and eventually shuffles and then walks. The skills of running and climbing follow and, by the age of four or five years, quite complex movements can be efficiently made. During the primary school years effective ball playing is achieved, but still the more complex co-ordinations lie ahead. At every stage it is important not to expect of children activities which put too great a strain upon their still maturing motor capacities.

The newborn baby's first important perceptions are oral, connected with the act of sucking. Soon, however, the eye, ear, nose and skin perceptions come into effective action; along with the inner perceptions of hunger, thirst, fatigue and the like. Gradually the baby learns to associate specific perceptions with the advent of pleasant or unpleasant happenings and integrates groups of individual perceptions into wholes. The sense slowest in reaching maturity is that of sight, and it is usually not until some time in the second year that muscular control of the direction of the eyeballs is perfected, while control of the muscles adjusting lens curvature and hence focus comes yet slower. Even by the beginning of the school years, eye control is still sufficiently imperfect to necessitate great care in the avoidance of strain through excessive reading of small type or concentration upon fine work.

With the learning of language and the development of spatial conceptions and neuromuscular skills the child is eventually able to express himself in speech, drawing and writing. Henceforth his ideas may become increasingly verbalised, and that logical handling of verbalised concepts which we regard as the purest expression of intelligence becomes possible. Factors such as memory and imagination, however, are also usually involved in mental processes;

while young children seem often to solve problems intelligently without any verbalisation.

Some people commonly speak and write as if " intelligence " were some abstraction which, if it could not actually exist without a body, could at least be imagined disembodied. In fact, however, as observation of small children readily shows, the growth of intelligence is closely connected with the development of bodily co-ordination, the refinement of sense perceptions and judgments, and the attainment of linguistic abilities. That is to say, intelligence requires for its full development not only a corpus but a society. Nevertheless, it is equally clear that children vary enormously in the effectiveness with which they react to and achieve mastery over the world about them, and it is, roughly speaking, this variability which is commonly measured as intelligence. The measurement of " general intelligence " in terms of mental age and the calculation of " intelligence quotients " are now commonplace procedures, and other facets such as " the verbal factor " and the like are also increasingly being measured. Such measurement is of great value in learning about children, but it should not be carelessly assumed that such quotients are unalterable and independent of the environment.

For many purposes in life other aspects of personality are more important than intelligence. Happiness, nervousness, courage, tendency to worry, self-confidence or lack of it, aggressiveness, kindness, generosity, selfishness, co-operativeness, tendency to dominate or to follow others, tolerance or intolerance—all these and other traits are built up into a most complex personality pattern. Just what is the nature of the building process we have as yet little idea, but what we do know is sufficient to cast doubt on many widely held ideas such as that personality is fixed in early childhood and that personality changes cannot be effected in adolescence or later. It is also sufficient to show impressively the wide range of what are " normal " personalities and therefore the foolishness of trying to force every individual into the one mould determining what personality " should be."

Thus, as in the case of physical growth, mental and emotional growth proceed at individual speeds and form personal patterns. The wise parent and the wise teacher will, therefore, at all stages seek to understand each separate child in order that its education may be devised to suit itself rather than a statistical mean of all children of its age.

Sex and Reproduction

There are few areas of human growth and development so beset by popular ignorance and misunderstanding as those of sex and

reproduction. Although it is now widely accepted that children should not be misled by myths about storks and gooseberry bushes, many parents and teachers still fail to appreciate the important part which sex plays in the life of the normal individual.

It is fairly clear that the infant's early sensations connected with suckling, bodily contact and defæcation have some sexual connotation ; and, although it is not necessary to accept all the claims of any particular school of psychology in this matter, it is no longer possible to pretend that young children have no sexual feelings. When the infant, in the normal course of exploring his body, finds and plays with his sexual organs, there is no reason to expect any ill results, and the still quite common practice of dealing with this so-called " infantile masturbation " by binding the child's hands or expressing disapproval is undesirable. If the child is encouraged to develop a many-sided interest in the world around him, he is likely soon to cease masturbation and most unlikely to harm himself in any way. If an apparently excessive preoccupation with masturbation persists, the parents should concern themselves not so much with this surface sign as with the probable underlying emotional disturbance ; and, in the event of difficulty, should seek skilled advice.

Similarly, when the adolescent boy (or perhaps girl) rediscovers the bodily sensations that come from masturbation, there is no need for concern. Since in our society the normal outlet of sexual intercourse is disapproved before marriage, it is inevitable that some other outlet for sexual feeling will be found, and this will often take the form of masturbation. There is no evidence that this self-stimulation does any harm, either physical or emotional : what does harm is the stress that comes from feelings of guilt, worry and peculiarity. Accepted as a common stage in development, likely to be largely left behind as normal sex relations become possible, masturbation (or " auto-erotism " as it is perhaps better called) should not be regarded as a " problem " except in those rather rare cases in which the habit becomes obsessive, when skilled psychiatric attention is called for.

During adolescence the question of boy-girl friendships, involving consideration of physical love-making (or, in the common phrase, " necking and petting "), becomes important. The desire for kissing and caressing is perfectly normal, and in purely biological terms would be expected to lead on in the normal way to full intercourse. Where social, ethical or religious considerations stand in the way of intercourse, there is a real possibility of emotional frustration (as, indeed, there equally is where intercourse is indulged in against social disapproval or the dictates of conscience) and young couples should consider most carefully the extent to which they

feel it wise to allow themselves physical intimacy. A wise decision, however, is less likely to be reached if the clear light of reason is obscured by the fogs of fear and unmerited guilt.

The simple facts of the anatomy and physiology of sex are now readily available in easily procurable books and will not be repeated here. It is, however, worth mentioning that the many old wives' tales relating to menstruation (such as that normal washing and exercise are dangerous or that menstruation is in the nature of an illness) are without foundation, and that if a girl feels anything more than a mild discomfort at these times she should seek medical advice. Similarly, there are still current many false ideas relating to intercourse, conception, pregnancy, birth and the menopause, and all educators should make sure that they are familiar with the main facts in this important field.

Nutrition

It is clearly proven that healthy growth and development depend very largely upon adequate nutrition, and most people have heard of scurvy, beriberi, rickets and other nutritional diseases. Yet, while these gross diseases are of great moment in some badly fed countries, in others with a higher nutritional standard the more important fact is that improvement in what had previously been considered an adequate diet often produces quite noticeable improvement in health. It is therefore important that people, and children in particular, should be guided into dietary habits which will ensure optimal nutrition.

Since nutritional, like other, needs vary from person to person, tables of food component requirements are of more value to the caterer as a guide to large-scale purchase than to the individual as a guide to daily eating. But a good intake of calories implies a fairly hearty appetite with carbohydrates (notably bread and potatoes) and fats providing the major energy source. It is also important to remember that proteins (such as especially meats, milk, cheese, fish, eggs, soya flour and pulses) are proportionately more needed by children and adolescents, who are still actively growing, than by adults.

The vitamin components of diet are of great importance and, at any rate in the English-speaking countries, high-powered advertising campaigns have ensured that most people are aware of their existence. It is established that vitamin A (which occurs in fatty foods such as fish liver oils, milk, butter and eggs, and which can be synthesised by the body from the carotin of green and yellow vegetables) is essential for healthy growth and development, especially that of the mucous membranes, and plays a part in adaptation to near-darkness. The vitamin B complex consists of

many chemicals. Thiamin (vitamin B_1) helps to maintain normal appetite and digestion and nervous health, so that deficiency in it produces various gastro-intestinal troubles and some types of neuritis, with beriberi in extreme cases. Riboflavin (vitamin B_2 or G) is also essential for healthy growth and its deficiency may cause skin lesions and eye troubles. Nicotinic acid, pyridoxine and other components of the complex have somewhat similar functions, their gross deficiency causing pellagra. Most of this B group of vitamins are present in a combination of wheat germ and whole grain cereals generally, yeast preparations, liver and other meats. Vitamin C (ascorbic acid) is of special importance in skin health, particularly that of the gums, and shortage of it produces scurvy. Vegetables and fruits, especially if uncooked, provide this vitamin, notably good sources being orange, turnip, rose hip, black currant and tomato. Vitamin D is necessary for healthy bone and tooth growth, its deficiency leading to rickets and dental decay. The richest sources are fish liver oils and fatty fish, while exposure to sunlight also helps. Vitamin E bears some relationship to fertility, but its action is by no means fully understood.

The mineral components of the diet are also important. Calcium is needed for tooth and bone development and nervous tone, and is supplied largely by milk. Phosphorus, similarly needed, occurs in milk and in eggs, whole grains and pulses. Iron, needed for hæmoglobin formation and thus for the prevention of anæmia, is obtainable by eating a wide range of foods such as liver, red meats generally, green leafy vegetables, dried apricots and other fruits, whole grains and cocoa. Iodine, essential for normal thyroid functioning, occurs richly in sea fish and in the drinking water of some districts, but in other districts needs supplementing by iodised table salt and the like. Fluorine, which plays some part in the prevention of dental decay, is mainly derived from drinking water. But, to some extent, mineral salts of a wide range occur in a great variety of foods.

It thus appears not to be difficult to select certain foods of exceptional nutritional importance and thereupon to construct satisfactory dietary patterns. Milk (at least a pint and if possible a quart daily, either as a drink or in other forms), fresh vegetables (if possible two green or yellow vegetables each day), fresh fruit (one or two servings daily, preferably including some citrus fruit), butter (or margarine with vitamin fortification), wholegrain cereal and/or bread, protein foods (such as meat, cheese, eggs and pulses) and carbohydrate foods (notably bread and potatoes), provide the basis for innumerable different well-balanced diets. It must not, however, be imagined that any one food or combination of foods is essential. The number of satisfactory dietaries is legion, and it is

therefore foolish to expect children to learn what is " the best day's menu," or to seek to persuade them to study each meal as a biochemist might. Some children cannot enjoy citrus fruits, others are repelled by cheese, yet others reject raw vegetables. It is quite possible to devise satisfactory diets nevertheless, and it should be an issue for sensible decision in each case whether or not it is worth while to urge the eating of a particular plateful. Certainly it should not be regarded as a matter of dietary necessity, or, even worse, of personal prestige.

Thus the prime aims in nutrition education should be the encouragement of joy in good food, the establishment of habits of consuming foods of outstanding dietary value, the inculcation of sufficient factual knowledge about foods and their preparation to give a general understanding of the part they play in the promotion and the maintenance of health, and the fostering of such positive attitudes towards food as will render likely the individual modification of feeding behaviour in the light of personal nutritional needs.

Drinking and Smoking

It has happened not infrequently that parents, teachers and lecturers have abused their rôles as educators by telling children lies or at least the grossest exaggerations about the effect of various drugs on the human body. The facts are fairly simple and ought to be well known.

Tea and coffee contain, among other things, the drug caffeine. The effect of caffeine is to stimulate the metabolism and increase the sensitivity of the nervous system. In the trying conditions of the modern world there is something to be said for the moderate use of such a stimulant, and it is probably only rarely that so much is taken as to be directly harmful to health. Unfortunately, however, there are some possible indirect disadvantages. By diminishing the feeling of fatigue, tea and coffee may lead to inadequate rest and excessive energy expenditure, resulting eventually in various manifestations of sub-health ; while, by replacing milk and fruit juices as sources of liquid intake, they may lead to deprivation of calcium, phosphorus and vitamin C. Since tea and coffee have themselves little or no nutritional value and their habitual use may lead to rest and food deprivation, it is well to discourage their use, especially by children. There is, however, no ground for some of the awful warnings often given to children. In any event, such warnings are self-defeating, for a child told of all the ills to be expected from tea drinking and yet observing the adults around him drinking it with obvious impunity, will soon conclude that this is merely one more example of adult hypocrisy. Thus, if the child shows a strong desire to share in the adult experience of tea drinking, it is probably

better to give him tea with a lot of milk in it than to deny his wish completely.

Alcohol, although often described as a stimulant, is in fact the opposite—a depressant which decreases the sensitivity of the nervous system. The common misapprehension is due to the facts that, by dilating the blood vessels of the skin, alcohol causes a pleasant glow of warmth and that, among its other effects, it depresses the activity of the frontal part of the brain. This is the part which exercises control over the remainder of the brain and is the region most fully developed in and most characteristic of humans. Thus the action of alcohol is to "liberate" the more animal-like part of us from the restraints imposed by the more specifically human part and this leads to a subjective impression of stimulation. Most children will readily agree that alcoholic indulgence to the extent of drunkenness is disgusting and disgraceful, but there is no need to condemn the occasional glass of wine or pint of beer or ale. It should, however, be made clear that even a small consumption of alcohol has a measurable slowing effect on neuro-muscular reaction and that, therefore, a person in charge of a motor car, where even a slight delay in the application of brakes may mean an accident or death, is under a moral obligation to refrain completely from alcoholic beverages. It will be instructive, moreover, to point out the preferential life insurance rates offered to tectotallers as an indication of their better vital statistics. Finally, since (apart from a small sugar and vitamin B content in beer) alcoholic beverages are of no nutritional value, the foolishness of spending large sums of money in this way should be emphasised.

Tobacco is, in the strict sense of the words, neither a stimulant nor a depressant. Its nicotine produces increased rate of heart-beat, raising of blood pressure and contraction of peripheral blood vessels ; the sensations produced being interpreted sometimes as of stimulation and sometimes as of relaxation. The attraction of smoking, however, is more complex than this and is compounded also of the sensuous pleasure of sucking, the fascination of watching rising smoke, the satisfaction of having something to do with otherwise unoccupied fingers, and mere social convention. Yet, once the habit is well established, it is very difficult to get rid of the nicotine addiction. The evil effects of excessive smoking are undoubted—ill functioning of the heart, various stomach troubles, persistent coughing and sore throat, in some cases enfeebling of neuro-muscular control, and so on—but there is no evidence of real harm resulting from a few cigarettes each day or their equivalent. Undoubtedly, however, children should be discouraged as far as possible from smoking, if for no other reason that there are many far better things to be bought with the money ; but it is rank dishonesty to pretend

that a child's growth will be " stunted " by an occasional cigarette.

Where these habits of drinking and smoking are concerned, the objective to be sought is true temperance, which consists not in a rabid intolerance and refusal to accept in moderation the pleasures of the body, but in a balanced appreciation of their advantages and disadvantages and a proud refusal to become the slave to any of them.

Exercise and Rest

Of recent years the genuine values of physical exercise have been obscured by the smoke-screen put up by enthusiasts of the " bulging biceps " school. For the great majority of us (who are, after all, unlikely to be chased by a lion, to have to lift great boulders unaided, or to need to swim miles from a sinking ship) the achievement of the top flights of physical effort is not likely to make us any safer or any healthier. Realising this, many people go to the other extreme and falsely conclude that they need not bother at all about physical exercise.

In fact, however, physical exercise has several values. A certain amount is necessary to the maintenance of adequate muscle tone, the avoidance of flabbiness, and the achievement of sufficient strength and skill to meet the daily requirements of life with a fair margin. More important, activity of the skeletal muscles affects the rest of the body. It increases the rate of flow of the blood and thus stimulates the involuntary muscles of the digestive and voiding organs, it stimulates the formation of blood corpuscles, it causes deeper breathing, and, by strengthening the muscles of the belly, helps in the proper carriage of the pelvis and proper functioning of the abdominal organs. The sharpening of the appetite induced by exercise is conducive to good nutrition and, with its accompanying sense of bodily glow, helps in the development of a feeling of satisfaction and confidence. Moreover, in a world in which fatigue is too often an expression of nervous tension or spiritual malaise, the production of simple physical fatigue by vigorous exercise is valuable in bringing about physical and mental relaxation. It is clear, moreover, that the normal growth and development of the body, and especially of the muscles, is aided by exercise ; and in our sedentary civilisation it is necessary to make compensation for the loss of the primitive activities of running, climbing and jumping. The achievement of strength, stamina, agility and poise is a satisfactory thing, and physical exercise can help towards that achievement.

There is therefore a good case for encouraging the habit of regular and vigorous exercise. Earlier fears of the development of " Athlete's heart " were much magnified if not illusory, and there

is little risk of children doing themselves harm by "overstrain" unless they are urged on too far in competitive athletics. Nonetheless, children vary greatly in their hereditary neuro-muscular endowment, and regular medical examinations are desirable to estimate their individual requirements and limitations.

And, finally, here as elsewhere it is important to avoid doctrinaire rules. Some people (especially adolescents and young adults) love and thrive on violent exercise, others (especially as they grow older) prefer and do better on gentler movements, while yet others seem to be perfectly healthy and happy with no more exercise than they get by going about their daily pursuits.

There is a widespread and justifiable belief in a close relationship between posture and health. Flatness of chest reduces lung expansion space and thus efficiency of oxygen absorption, excessive and abnormal curvatures of the spine may cause distortion of the abdominal organs generally, while foot and toe malpostures may lead to many troubles.

This does not mean, however, that it is possible to specify "the right way to stand" or "the right way to sit," with the implication that any other posture leads to ill health. In the first place, people have different anatomies and different systems of body mechanics, so that it would be rarely that two individuals would naturally have the same posture. The one individual, moreover, will have notably different postures at different stages of development. The baby normally has some degree of "bow legs," the toddler of "knock knees" and "protruding abdomen" with "hollow back" (which has often been described as a lordosis, with the false implication that the spinal curvature is of pathological nature). As growth continues the back straightens and the belly flattens, leading to the more adult type of posture. Any estimate of a person's posture must, therefore, take into account his stage of physical growth. Some of the published estimates of postural defects, approximating in some cases to eighty or ninety per cent. of those examined, seem to demonstrate the unreality of the criteria adopted.

This is not to say, however, that no care need be taken about posture. Perhaps the greatest desideratum is wide range and variability of bodily movements, so that ligaments do not shorten and muscles lose extensibility. Thus, it is not so much a case of any one posture being good or bad, but rather that any posture is bad if too long maintained. It should be remembered also that good posture is to a considerable extent an æsthetic concept and it may often be more profitable to encourage attractive ways of holding the body on æsthetic than on hygienic grounds. The desire to look attractive is a very potent motive for behaviour. But, in general, a child with noticeably poor posture—rounded shoulders, slumped

body, slouching legs and the like—is unlikely to stand or sit better as a result of exhortation. What he really needs is individual consideration so that it may be decided whether he specially needs better food, more exercise, greater self-confidence, more rest, remedial exercises or a combination of these. In other words, poor posture may have greater importance as a sign of some more serious wrong than as a wrong in itself.

Closely related with the question of physical exercise is that of rest, which is one of great importance to children and often to adolescents and adults. Sometimes fatigue is merely muscular in nature and is associated with excessive cellular production of lactic acid, in which event all that is needed is less exercise. While occasional " tiring out " is not shown to be physically harmful and may be spiritually valuable (for he is a poor person who does not sometimes extend every fibre to its very limit), and there is no need whatever to worry about a few late nights or not too frequent physical exhaustion, chronic fatigue is a very different matter. If this state is allowed to develop the body becomes less efficient in a motor sense, susceptibility to infection is increased, recovery from illness is rendered more difficult, digestion and assimilation are adversely affected and nervous and emotional stability impaired. It is, therefore, important for parents and teachers to keep a weather eye open for the usual signs of child tiredness—irritability, headaches, lack of appetite, bad temper, either restlessness or listlessness, pallor, puffiness and darkness about the eyes, and in some cases muscular tremors and speech uncertainties.

It must be remembered, however, that the sole causes of fatigue are not too much exercise or too little sleep, for very often there are other complicating factors. Excessive noise, monotony of activity, inadequate ventilation, over-use of the eyes in poor light, general sub-health, emotional disturbance, and minor anæmia may form a complex very resistant to solution. Yet it is not to be imagined that nothing can be done without elaborate investigation, for most fatigued children will quickly benefit from greater opportunities for relaxation, more frequent rest periods and longer hours of sleep. The usual recommendations of twelve hours sleep for six- and seven-year-olds, eleven to twelve hours for eights and nines, ten to eleven hours for tens and elevens, and about ten hours for twelves and thirteens, are useful as general guides ; but here, as elsewhere, it must be remembered that children are individuals and need different rations of rest.

But, once the immediate and obvious step of providing greater rest has been taken, the less obvious but very important factors of food, light, ventilation, clothing, quietness and mental state should then be subjected to careful examination.

Sun and Air

Beliefs about the effects of fresh air and sunshine upon health have shown remarkable vagaries. Only a few generations back it was widely believed that the night air was harmful and windows were kept firmly closed, while to-day there are many who imagine that great gales howling through their houses will blow away all ills. Similarly, precautions used to be taken to guard against the reputed ill effects of sun on the lily-white skins of women and children, while modern lidos are crammed with the brown and red bodies of those who have faith in semi-grilling as the avenue to health. The truth lies between such extremes.

Fresh air is valuable not because stale air is short of oxygen or too rich in carbon dioxide (although many hospitals still remove flowers from the wards at night out of a superstitious regard for a purely imaginary increase of carbon dioxide to danger level), for only rarely is such a state reached. It is the humidity and warmth of the air which makes it oppressive, and there is not the slightest evidence that the odour of human sweat or other bodily emanations is in any degree harmful to health. On the other hand, fresh and moving air produces greater bodily comfort, appears to tone up the skin, reduces the risk of airborne infection indoors and gives a feeling of exhilaration which is certainly good for mental health. Individual tastes vary greatly, however, and the person who sits shivering because he feels a moral obligation to have wide open windows shows more stoicism than sense. Conversely, he who fears to venture out for a walk because there is a cold wind blowing and knows not the joy of sharp blasts on hilltops is more mollusc than man.

Sunshine also has important mental values, for few can be as miserable in the brightness of high summer as in the gloom of winter fogs. There are, however, other benefits from the sun. With the aid of its rays our skin manufactures vitamin D and thus helps the health of bones and teeth, while these same rays are bactericidal and thus help to prevent the spread of disease. There is no satisfactory evidence that sun-tanned skins are in themselves any healthier than pale ones, and there is certainly danger in excessive sunning, but, provided that there is due warning against excess, the modern tendency towards fewer and lighter clothes and greater bodily exposure is in general a healthy one and to be encouraged.

Disease

While the building up of general bodily health and efficiency is in itself eminently desirable, it must not be imagined that thereby is obtained immunity from infection. In the case of colds, tuberculosis and various respiratory and skin infections, susceptibility is

markedly increased by malnutrition, fatigue and general bodily strain ; but there is no evidence that the influenzas or common fevers selectively attack the weak.

Immunity may be naturally acquired as a result of a previous, possibly unnoticed, attack of the same disease. In the case of the common infections of measles, German measles, chicken pox and scarlet fever, the body produces antibodies which usually protect it throughout life against re-infection. The less common but more serious smallpox and diphtheria are usually avoided by childhood protection. Vaccination against smallpox consists of the introduction, usually into a scratch on the arm, of a vaccine containing lymph from a calf which has had cowpox, to which the body reacts as it would to an ordinary smallpox infection, by manufacturing the appropriate antibody. Inoculation against diphtheria consists of the introduction, usually by hypodermic injection, of a mixture containing diphtheria toxoid or other serum, which similarly stimulates the body to the formation of the appropriate antibody. In each case the immunity is "active," in the sense that it has been actively produced by the body itself in response to the introduced substance. In other circumstances, as with the young infant protected by antibodies imbibed in the mother's milk, or with the measles patient given an injection of serum containing antibody from a convalescent case, the immunity is described as "passive," and lasts for only a relatively short period. There is no need for every member of the community to know the precise distinctions between antitoxin, agglutinin, vaccine, toxin-antitoxin, toxoid and the like, but everyone should have a general understanding of the idea of antibody formation and should be encouraged to develop a sentiment in favour of vaccination and immunisation.

In Britain, diseases due to larger parasites, such as worms, are comparatively rare, but tapeworm is by no means unknown ; while, in many countries, hookworm takes a terrible toll of human vitality. There are also some unpleasant diseases, such as scabies and pediculosis, which are due to mites and insects. Fungi are responsible only for comparatively few important diseases, notably ringworm and athletes' foot. Protozoa, the simplest animals, are the agents of that most devastating of diseases, malaria, and of syphilis, sleeping sickness and amœbic dysentery. Bacteria, the simplest plants, cause a very wide range of diseases, including diphtheria, tuberculosis, gonorrhœa, impetigo and boils and pimples. Finally, viruses, which are extremely small bodies apparently on the borderline between living and non-living, cause smallpox, chickenpox, poliomyelitis, influenza, measles, mumps, yellow fever and typhus. It is, of course, unnecessary for every child to become an expert parasitologist, familiar with all the details of each

pathogen. What is more important is an understanding of the common modes of dissemination of disease and the development of habits tending to limit such spread.

Any scheme of classification is bound to give an unreal appearance of neatness and rigidity but, for practical purposes, the methods of spread of the communicable diseases may be placed in four main groups. First, there is contact infection. Most notable in this group are the venereal diseases, such as syphilis and gonorrhœa, which are spread by sexual contact. This, although mere fear is a poor reason for any moral code, is one argument for monogamy. Another contact disease is scabies, which is normally spread by close bodily contact, as in the sharing of a bed. This makes it important that, if a case occurs, all members of the family should be examined and if necessary treated, since otherwise re-infection within the family is almost certain to occur. And, commonest of the contact diseases in schools, there is impetigo, whose spread can be halted by the most meticulous avoidance of contact. It is not clearly known how commonly other diseases are in fact spread by the use of other children's toys, books, pencils and the like, but some discrimination should be encouraged on general grounds.

Vector-borne infection is, over the world as a whole, of enormous importance. The transmission of malaria by anopheline mosquitoes, of typhus by lice and of plague by rat fleas, is responsible for many millions of deaths each year. In Britain, however, the most important vector is the house fly, which transmits disease bacteria to food and is thereby responsible for much, especially infantile, diarrhœa and gastro-enteritis. The precautions to be taken are simple enough in principle—the annihilation or exclusion of the vector concerned—but often difficult in practice. Yet much could be achieved as a result of widespread health education.

The incidence of food-borne infection has been drastically reduced in Britain during the last century, mainly as a result of improvements in communal water and sanitary engineering. Great outbreaks of cholera and typhoid fever no longer sweep away tens of thousands of our people, but smaller occurrences from time to time point out the danger of the slightest gap in our sanitary defences. Other food-borne diseases, however, such as infantile diarrhœa and vomiting and various digestive upsets, are still far too common, especially in the warm summer and autumn months. Typhoid and paratyphoid still occur, as do bacterial food poisoning and bacillary dysentery ; and during recent years the great extension of communal feeding has markedly increased the chances of spread of certain food-borne diseases. Moreover, milk may spread bovine tuberculosis and various forms of throat soreness. Thus, apart from the public control of water supplies and sewage and the public

inspection of food sources and distributors, much can be done by the private citizen, adult and child alike. Health education should certainly include the inculcation of the habits of scrupulous cleanliness in the handling of food, the covering of refuse bins, the disposal of excretory products and similar hygienic procedures. It should also encourage the preferential purchase of wrapped foods, the rejection of chipped or dirty café crockery, the choice of pasteurised rather than raw milk, the selection of reputable makes of ice cream and, wherever possible, breast rather than bottle feeding.

Finally, and most important in most temperate countries, there are the air-borne infections. In the droplets produced by coughing and sneezing there are distributed the pathogens of many diseases—colds, influenzas, pneumonia, tuberculosis, diphtheria, scarlet fever, smallpox, chickenpox, measles, whooping cough, mumps, meningitis and others. Large drops may infect persons nearby, smaller droplets may remain suspended in the air for long periods and eventually infect others at a distance, while yet other droplets may become attached to dust particles and thus be distributed by the vigorous activities of the housewife and cleaner. It is difficult to block all possible channels of spread, and this is why diseases of this group have not been so dramatically reduced in incidence as other diseases, but health educators can do much. Children should be trained to catch in large handkerchiefs their coughs and sneezes and to refrain from spitting in public places. Adolescents and adults may be persuaded to have regular mass-radiograph examinations. Parents can be persuaded to have their children vaccinated and immunised and to keep their houses well-ventilated and well-sunned. The stirring up of dust in well-intentioned domestic zeal must be discouraged. By a combination of these measures, it should be possible to bring about an appreciable reduction of air-borne infection.

While the teacher should not be expected and should not even try to take over the rôle of physician and diagnose pupil infection, she should have a general familiarity with the commoner indications of the more prevalent diseases. Any noticeable flushing, high temperature, redness or wateriness of eyes, running of nose, pain or discharge of ear, soreness of throat or neck, persistent coughing or sneezing, vomiting or diarrhœa, or indeed any other remarkable deviation of the child from normal appearance or behaviour, should be a warning of possible infection. Experience quite quickly makes it possible for the teacher to make more specific guesses at what the infection might be, but actual diagnosis must be left to the physician.

Most local education authorities have their own regulations about the exclusion of children in known contact with infections and about the circumstances in which schools should be closed, but a great deal

of latitude remains to the teacher in persuading parents to keep their children at home when unwell. Unfortunately, however, the conscientious teacher, who encourages a child with a sore throat or explosive sneeze to stay at home, often fails to apply similar self-discipline to herself. Since this failure is usually due to a creditable reluctance to overburden the colleagues who would remain, it is important that education authorities should willingly provide temporary teachers for such contingencies.

The advances of the past century in preventing the spread of infection and raising the general level of hygiene of many countries has led some people to envisage the total abolition of communicable disease within a not too distant future. It is salutary, therefore, to remember that health is a complex matter, aided and hindered in manifold unsuspected ways ; and of this the history of poliomyelitis is an excellent example. This fever, caused by a virus with a marked tendency to variation, may be spread by flies or by air or fæces, and its epidemics reach a peak towards the end of the warmer half of the year. It may be heralded by any combination of a multitude of signs—headache, sweating, vomiting, diarrhœa, lassitude, constipation, muscular stiffness, etc.—and in a proportion of cases leads to paralysis and sometimes to death. Until more is known about it, the most hopeful preventive appears to be plenty of rest and the avoidance of crowds, while those paralysed depend largely upon physical therapy.

Although this disease, the so-called "infantile paralysis," has occurred sporadically from the earliest times (an Egyptian skeleton dating back five millennia showing signs of its ravages), it was first undoubtedly recorded in 1784, and not until 1890 did the first explosive epidemic occur, in Sweden. Within a few years, epidemics followed in other parts of Scandinavia and then in the U.S.A., where a major outbreak occurred in 1916. By 1947 the disease was of serious concern in Britain, hitherto comparatively untouched.

The strange feature of this disease is that it first occurred on a large scale in a country and at a time with a high and rising standard of public hygiene, and since then has successively spread to other comparatively hygienic lands ; while the malnourished and malodorous regions of China, India and the East generally suffer from it little. Moreover, those who live in poor slum areas are attacked less than the better-fed and cared-for residents of wealthier districts, while the greatest damage seems to be done to robust, healthy and athletic children rather than to the slight and listless.

This apparent paradox is as yet unexplained. It is, however, thought likely that, in lands of poor public hygiene, most people are sub-clinically infected with the causative virus early in life and thereby acquire immunity, while the more protected people of

hygienic lands avoid this early infection and are thus left unprotected if an outbreak comes later in life. This theory is supported by the fact that most of the comparatively few sufferers in the East are under three years of age, while the peak age among the many cases in the U.S.A. is some ten years older. This is, of course, not an argument for the abandonment of measures of community hygiene, but for the avoidance of a too-easy optimism.

It is well also to consider the vast range of illness caused by diseases of a complex nature, such as cancers and rheumatisms. The common use of the singular " rheumatism " tends to give the impression that here is an understood and specifically labelled disease, and to conceal the fact that the label covers a wide variety of disorders, including rheumatic fever, rheumatic arthritis, osteo-arthritis, gout, fibrositis, sciatic pains, etc. In England and Wales this congeries of complaints produces one-sixth of the total invalidity of the adult population and is responsible for the loss of some three million weeks' work in the year.

Rheumatic fever (a term covering common " rheumatism," " heart disease," and " chorea ") commonly attacks children from five to ten, and males more than females. It is probably caused by a hæmolytic streptococcus (and perhaps also a virus) and is connected with overcrowding, fatigue, and excessive exposure to damp and cold. Rheumatoid arthritis usually sets on in the productive middle years from about fifteen to forty-five, and is five times as common among women as among men. It may have similar causes to rheumatic fever, and seems also sometimes to depend upon failure of the body's temperature-regulating mechanism or of the thyroid or ovarian secretions. Gout usually attacks adults, and males ten times as frequently as females, and often seems to be familial in occurrence. Inherent metabolic instability, allergic tendencies, overdrinking and overeating, worry, infection and lead poisoning have all been suspected as causes in different cases—a confusing assemblage of possibilities characteristic of the rheumatic diseases.

Where so little is certainly known of cause, it is not surprising that claims for cure are contentious, and the field is still wide open for the credulous. Specific treatments such as the surgical removal of tonsils or other infected foci, dosage with salicylates to relieve the pain of rheumatic fever, and aurotherapy for rheumatic arthritis are recognised as stop-gaps (although the recent successes of cortisone with rheumatoid arthritis are striking) ; and otherwise reliance must be placed on a suitable combination of rest, fresh air, warmth, good food, hydrotherapy, remedial exercises, diathermy and dieting. Yet we cannot sit with hands folded until scientists have unravelled this extremely tangled skein : in the meanwhile all who have to do with children must guard them from over-

exposure to cold and damp and fatigue, give them houses and schools which do not necessitate overcrowding, keep weather eyes for complaints of " pains in the legs " and so-called " growing pains " which may be rheumatic precursors, and provide them with a society in which they can grow with minds unworried and serene.

Home and School Environment

It is clear that housing conditions markedly influence health, for families living in poor houses suffer more than their fellows from rheumatic fever, tuberculosis, respiratory illnesses, vector- and food-borne infections and infestation of all sorts. Merely to accept passively unsatisfactory housing conditions and to use them as an excuse for not teaching home hygiene is defeatism. Children should learn what is desirable in housing and how the worst effects of poor housing may be overcome and, with care and sensitivity on the teacher's part, this can be done without any friction with parents. Similarly, those (such as health visitors and social workers) who come into contact with the parents themselves can give a great deal of valuable help, advice and encouragement.

The school is, next to the home, the most important agency in the rearing of children and, therefore, every aspect of school life is of importance to child health and development. There are, however, some aspects of particularly obvious relevance. Factors in the classroom which notably influence the health and well-being of the pupils include ventilation, temperature, humidity, lighting, colour, noise, equipment and cleaning. Technical standards are laid down in building manuals and governmental regulations, and the teacher can scarcely be expected to be familiar with them all. He should, nevertheless, know and as far as possible put into effect the most important of the generally accepted recommendations. It appears to be commonly imagined that the main reason for ventilation is to ensure an adequate supply of oxygen for breathing purposes, but as already explained this is not so. In schools, apart from considerations of comfort, the major value of ventilation is that it reduces markedly the spread of communicable diseases and it should therefore always be given careful attention. As well as draughts, extremes of temperature and moisture content should be avoided and, for most people, a range of 60° to 65° F. and 35 to 60 per cent. humidity appears to give most comfort. Since, however, individuals differ, it is not possible to arrange ventilation to give maximum comfort to all members of the class, and the teacher must simply try to suit as many as possible without seriously upsetting any.

Since so much reading is done in the classroom, proper illumination is important. Most children seem to work best with an

illumination of about 15 to 20-foot candles (on the work, not the eyes). Lamps should be high in the room so as to be out of the pupils' normal cones of vision, lamps of higher power should be in the darker corners of the room (instead of, as is usually the case, lamps of uniform wattage), windows should be at the back or sides of the classroom (or, if it is quite impossible to rearrange the desks to avoid front illumination, the lower parts of the windows should be covered over), and walls should be of pleasant light colouring. Great care should also be taken in the selection of books, especially as to type size and ease of reading.*

Children, like adults, vary enormously in their reactions to noise, but it is commonly believed that 40 to 50 decibels is the maximum which should normally be allowed in the classroom (although the kind of noise is perhaps more significant than the total intensity). Much could be done by better acoustic planning of school buildings (and especially by the use of sound-absorbent materials in corridors, dining rooms, assembly halls and cloakrooms), but in the meanwhile teachers must endeavour to do the best possible in existing buildings. The encouragement of light indoor footwear and the setting of an example of quiet and melodious speech will by themselves work wonders in this respect.

The equipment of the classroom is often very largely beyond the teacher's control, but not entirely so. When replacements are due, specific requests can be made for chairs and desks or tables which have been carefully designed on the basis of recent anatomical studies. Even with existing equipment, it may often be possible to provide more suitable fittings by the exchange of furniture between different rooms, instead of assuming that all children in a single class have bodies of the same size. Such fitting of furniture to pupils needs to be made not only at the beginning of the school years, for children grow rapidly at times, but preferably at the start of each term.

Another important element in school hygiene is the provision and proper use of drinking, washing and voiding facilities. Fountains are best for drinking ; but even the common tap is quite suitable if individual paper cups are provided, or ordinary cups well washed between drinkers. For washing, an ample supply of warm water is essential, together with adequate soap and preferably individual paper towels or hot air dryers ; but, whatever the equipment, only the teacher can ensure that hands are regularly washed after evacuation and before meals. Clean and pleasant urinals and closets are essential, and toilet paper should not be handed out niggardly as if it were a favour to be allowed to use it.

* In the U.S.A. higher figures than those given above for desirable temperature are commonly recommended.

Finally, the cleaning routine should be such as to leave the school bright and fresh, without a periodic stirring up of clouds of dust. For this reason, if for no other, it is necessary for the school caretaker to be brought into consultation with the teaching staff.

Safety

It might be argued that safety education is not part of health education but, since it is rather futile to preserve one's teeth only to lose one's life, this is an occasion when strict adherence to linguistic nicety might be abandoned. The modern world, with its millions of cycles and motor vehicles, its crowded streets and miles of live rails, its homes with gas taps and electric points, its domestic fires and boxes of matches, is indeed a hazardous place for those who have not learned to live in safety.

In the countries of greatest technological advance, more schoolchildren are killed by violence than by any disease and, even during the pre-school years, accidents are responsible for much crippling and death. During the first year of life the most common fatal accident is suffocation, which indicates the need for safety education of those about to be or newly parents. In the next four years burns and motor vehicles cause most deaths, with drowning and falls as appreciable causes. From five to fifteen, motor vehicles are much the greatest danger, with drowning in second place for boys and burning for girls. General trends such as these give a guide to what must be done, but in each locality there will be special hazards which need attention.

It is not suggested that children should be taught to avoid all risks, for a life lived on such principles is scarcely worth living, but they should know what the risks are and how they may be reduced to the minimum consistent with a reasonably full and active life.

Special Organs

There are certain special organs whose health is often a matter of particular concern and about which it is important that the basic facts should be widely known. These are the teeth, eyes and ears. Yet, while they may be considered separately, they should never be considered in isolation, as if their health were independent of that of the rest of the body.

There has been a tendency to do this in the case of the teeth and some propaganda has tended to treat teeth rather as doorknobs, to be burnished at regular intervals. Yet teeth are part of the living body, with nerves and blood vessels in the central pulp maintaining communication with it. Outside the pulp cavity is the layer of dentine and, outside this, the enamel layer of the crown and the cement layer of the root. These hard layers consist very largely of

calcium salts, but they are still in communication with the living body and continually exchanging atoms with it.

The evidence is not quite conclusive, but it seems likely that the most important factors in the maintenance of dental health are heredity, large milk intake by the pregnant mother before the baby's birth, large milk intake by the individual after birth, sufficient fluorine in the drinking water, plenty of jaw exercise and gum massage by the chewing of fairly tough and crisp foods, the avoidance of excessive carbohydrate foods that encourage bacteria, and good general health. For the sake of conservation in the event of minor decay, the dentist should be visited twice a year and, for the sake of a pleasant appearance and taste, together with any caries-preventing power that the process may have, teeth should be well brushed at least once each day preferably after the last meal.

The fact that tooth brushing is last mentioned here does not imply that children should not be taught to brush their teeth, even in the early pre-school years ; on the contrary, they should be encouraged to do so, for, apart from any prevention of decay, clean and bright teeth are so much more attractive than those stained and filmy. Moreover, brushing teeth almost inevitably involves brushing gums also, and this produces a most desirable stimulation of their blood circulation. Thus, while it is reasonable to make a special point of dental health, it is quite unreasonable to do so in a way which gives the impression that teeth are merely things which need regular brushing ; any honest account of the factors influencing dental health touches at point after point upon health requirements generally.

The eyes are, more obviously than the ears, an organic part of the whole functioning body, yet people often talk as if they were mere cameras whose functioning could be considered apart from their cases. The analogy with a camera is often useful, but only if it is kept within proper bounds.

Each eye is approximately spherical, having a tough outer or scleroid layer and a thinner inner choroid layer, this latter being rich in blood vessels. The front region of the outer layer, the cornea, is transparent and slightly protruding. Over the cornea and the visible part of the sclera is a mucous membrane, the conjunctiva, containing a few capillary blood vessels. Suspended by ligaments inside the eye, near the cornea, is the transparent lens, which is formed of concentric layers, rather like an onion. Between the lens and the cornea is the annular iris, with its combination of differently coloured pigments, and its central hole or pupil. Around the inner edge of the iris is a ring of muscle which contracts the pupil in bright light ; while around its base, where it joins the sclera, is the ciliary muscle which, by pulling on fibres connecting it to the lens,

alters the focus of the eye. Between the cornea and the lens is the transparent aqueous humour, a watery liquid which is continuously produced by the gland cells of the ciliary body and drained away from the eye by a tiny canal near the join of the iris and cornea. In the aqueous humour are dissolved food substances, including a very high concentration of vitamin C, which provide nourishment for the lens and cornea. Behind the lens is the transparent vitreous humour which, although containing only about one per cent. solid matter, is a quite stiff jelly.

Inside the red choroid layer is a thin layer of black pigment and, inside this, the thin, delicate transparent retina. At the back of the eye, not quite opposite the centre of the cornea, enters the optic nerve, with its thin nerve fibres spreading out all over the retina to sensitive nerve endings, the rods and cones. These are more closely packed and of finer structure in the central patch or macula of the retina, which is therefore the part which can register the greatest detail. The cells in the macula are cones, which need fairly bright light for proper functioning and are sensitive to colour and fine details of form. Over the rest of the eye there are fewer cones, but more rods, which function in quite a dim light and detect movement better than details of shape. In the rod cells is a pigment, visual purple, which is bleached by light and, in some way not yet fully understood, causes the stimulation of the rods and hence the sensation of light. Visual purple is chemically related to vitamin A and those deficient in this vitamin have poor night vision. As yet, no comparable chemical has been found to explain sensitivity to light in the cone cells, nor is the mechanism of colour vision by the cones understood.

The eyes, inside their bony sockets, are regulated in position by external muscles, which normally move them in harmony to look at any desired object. The eyelids provide protection from light when closed and, by rapid blinking, from flies or other foreign bodies approaching the eyes. The upper lid drops momentarily every few seconds, thus keeping the conjunctiva clean and moist. At the inner corner of each lid is the opening of a tear duct, which drains off into the nose the tear liquid being produced continuously by the tear glands. Along the inner edge of the lower lid is a row of minute pores, the openings from the glands which produce a greasy secretion that lubricates the lids. Just in front of this row, and in a similar position on the edge of the upper lid, are the eyelashes.

Thus the eyes are extremely complex organs intimately connected with the body in many ways, and their healthy functioning depends upon the general bodily health. The conjunctiva may become infected, leading to conjunctivitis. The lens may lose its transparency, producing a cataract. Vitamin A shortage may lead to

failure of dark vision, and, in worse cases, to xerophthalmia. Deficiency of vitamin B may cause the intrusion of the surrounding blood vessels into the cornea, where they interfere with vision and cause inflammation and soreness. Heavy smoking and drinking may damage the optic nerve and thus cause partial or eventually complete blindness. Indeed, there are literally hundreds of ways in which the eyes might go wrong. This is not to say that children should be encouraged continually to fuss and worry about their eyes ; what is needed is that they should learn that eyes are complex and delicate, and should habitually avoid exposing them to risk of injury.

Usually, however, when vision is inadequate, it is so not because of any true disease, but because of some sub-efficiency of focusing. Most people are rather " long sighted " so that, when the eye is completely relaxed, the focus of the eye is rather behind the retina, necessitating slight accommodation to produce a clear image. The greater accommodation necessary for close vision, as in reading, presents no difficulty in most cases and glasses are not needed. If, however, the eyeball is very short in relation to the focal length of the eye's optical system, the considerable accommodation required may be beyond the powers of the ciliary muscle, and converging glasses are needed. Even if the accommodation is possible, the ciliary muscle may get tired and lead to headaches or eyeaches, or even perhaps to squint. In those cases in which the eyeball is too long, the focus for distant objects is in front of the retina. This cannot be corrected by the eye itself, since the lens cannot be flattened more than normal. The use of divergent glasses, however, corrects short sight quite simply.

Another sub-efficiency of refraction, astigmatism, is due to the cornea or lens having a curvature greater in one axis than in another, so that the focus is not a perfect spot. Most people are slightly astigmatic, and those cases which are serious enough to cause inconvenience may be corrected by the use of cylindrical lenses.

Long sight, or hypermetropia, tends to clear up during childhood as the eyeball grows longer. *Per contra*, short sight, or myopia, tends to get worse, or first appear, during childhood as the eye grows. Yet a third defect, presbyopia, tends to occur in later years. This is due to the gradual loss of elasticity of the lens, so that eventually it does not bulge when the ciliary muscle causes the suspensory ligament to relax tension. Thus presbyopia has an effect similar to that of hypermetropia : namely, a failure of accommodation to near objects. So far as is known there is no way of curing these sub-efficiencies of vision, nor can they be made worse by close reading, reading in bad light, reading in bed, and so on. They can,

however, be corrected by glasses, and associated headache, eyeache or nervous strain thereby diminished.

Although these refractive errors are not worsened by bad reading habits, reading in bed or in a bad light may nevertheless encourage "eyestrain," headaches, and postural defects and should therefore be avoided.

In perfect vision the two eyes are so moved by their exterior muscles as to bring the object under examination into focus on each macula, and this superimposition of two slightly different aspects is the basis of binocular vision. If the two sets of muscles, as a result of tiredness or intoxication, fall temporarily out of balance, this superimposition fails and a double image is seen. If the failure of balance is permanent a squint is produced, in which one eye looks at the object under examination and the other eye is aligned elsewhere. When this happens to an adult the double vision is most confusing, but a child soon learns to avoid confusion by ignoring the sight from the squinting eye and concentrating on that from the correctly aligned one. If this continues, the act of ignoring or suppression becomes habitually established and binocular vision is lost. Squint may develop as a result of malnutrition, weakening after measles or other diseases, emotional troubles, nervous and muscular strains due to uncorrected defect of vision—in fact from any combination of circumstances which may upset the delicate neuromuscular mechanism which maintains normal alignment. Fortunately, if it is treated early, it can usually be cured, often by a combination of surgical operation, exercises and spectacles.

Children who have to wear spectacles should not be allowed to think of their eyes as being defective; they should appreciate simply that humans are very variable creatures, with eyes varying as well as everything else, and that some people need glasses to help them to fit into our modern complex civilisation with comfort. They can appreciate that those with long sight are specially fitted for the outdoor work of sailors, sportsmen and so on; while those with short sight have the advantage in reading, fine needlework, watchmaking and similar occupations. Since the sight itself cannot be altered, what is valuable is the determination to extract the maximum advantage from it and to take great care of the glasses which minimise its disadvantage.

In general, education in eye health need not go into great anatomical detail. The important objectives are a simple understanding of how the eyes work and how they are intimately connected with the rest of the body, a realisation that good nutrition is necessary to good ocular health, an appreciation of the distinction between sub-efficiency of refraction and definite eye disease, a healthy scepticism of the claims of eye-lotion manufacturers, an

habitual care in the protection of eyes from infection and injury, and a willingness to seek medical advice in eye trouble.

The ears are often regarded merely as the organs of hearing, but they are also, perhaps even more importantly, organs of balance.

The outer cartilaginous ear trumpet possibly helps to collect sound waves, but is probably useless (except as a very convenient rest for spectacle frames) ; the important part of the ear is internal. The sound waves pass along the ear canal and cause vibrations of the tympanum or drum, which set moving a delicately connected set of three bones (the hammer, anvil and stirrup). The innermost of these, the stirrup, causes corresponding vibration of the window or fenestra which forms part of the wall of the coiled cochlea or shell tube. In the cochlea a liquid is set oscillating and stimulates the many fine nerve endings, which then send nervous messages to the brain which interprets them as sound. Attached to the cochlea are the three semi-circular canals, set in three planes at right angles to each other. In these three tubes is a fluid, which moves in them as the head is moved, stimulating nerve endings and thereby informing the brain of the movement and helping in the maintenance of balance.

Thus the ears, like the eyes, are complex and delicate organs and must not be dealt with roughly. Poor functioning of the sense of hearing may lead to backwardness in school and apparent dullness, with the possibility of emotional troubles due to the frustration that comes from inadequate communication with one's fellows. Any serious organic or permanent deficiency needs medical and special educational treatment, but temporary defect is not uncommon in usually normal children. This may be due to the accumulation of wax in the outer ear canal, or to stoppage of the middle ear (the region between the tympanum and the fenestra) as a result of infection spreading *via* the Eustachian tube from the naso-pharynx. Children should learn that such temporary deafness needs early medical attention to ensure that it does not become permanent, as, for example, by the infective puncturing of the ear drum or damage to the bones. It should be realised, too, that any treatment of the ears is a matter for a skilled doctor or nurse, and not for the patient or parent or teacher. And, as with the eyes, children should be taught what precautions to take against infection or injury, especially in sports such as swimming or boxing.

Mental Health

It is being recognised increasingly that we are psychosomatic unities, with body and mind intimately interacting. Apparently bodily failings such as enuresis, stammering, twitches and spasms,

asthmas and skin rashes may in many cases be of mental origin ; while apparently mental failings, such as irritabilities, temper tantrums, aggressiveness, cretinism and many others may in some cases have physical causes. It is, therefore, misleading to write or speak of mental health in isolation, but, provided that it is realised that such isolation is unreal, it may be useful at times to concentrate attention on the more clearly mental aspects of health.

Children obviously subnormal in intelligence, clearly neurotic or much maladjusted, need special medical and educational treatment and need not be considered here. Between these and the healthiest, however, there is a wide range of those with minor deficiency and mental sub-health, and wise parents and teachers can do much to help such. By the relief of worries and fears and the discouragement of morbidity and procrastination ; by the encouragement of confidence, honesty, cheerfulness, generosity, self-discipline, co-operativeness, persistence, ingenuity, resilience and a sense of social responsibility ; by the development of a home and school routine which provides opportunity for free choice within a supporting framework of accepted behaviour ; and by the example of one's own personality one can aid children and adolescents towards mental health.

At any age the personality may be influenced by the experiences it undergoes, but the first few years of life represent a period of peculiar lability. The attitudes of the parents are capable of modifying profoundly the genetic frameworks of the personalities of their offspring and of diverting or even damming the streams of instinctive urges. In no civilised community can these streams be left to wander free, but the modes of their modification may be many. The child's native aggressiveness, no less than his sexual feelings, must be brought into consonance with the general architecture of social requirements ; but not at the cost of producing damaging repressions and obsessions. Similarly, the adolescent must be guided towards full social maturity, implying the acceptance of adult attitudes towards sex and love ; but not at the cost of producing fear of or a distaste for these activities. And, if the educator, whether parent or teacher or other, is to give effective guidance, he must not only equip himself with a knowledge of the essential facts of personality development, but also have some carefully considered views on what constitutes a desirable personality.

It is, however, necessary to avoid a procrustean attitude. All cannot be fitted to one mental mould, and if all could it would be a very dull world. Some will be more cheerful than others and some more prone to perceive unpleasant possibilities, some will always wish to get on with the job in hand and others to daydream a little,

some will be more sociable and others seek greater solitude, and few (praise be to variability) will repeat perfectly the picture of the "average" child. Mental health we must encourage, but we must remember that it can exist in innumerable patterns, each with its own delicate individuality.

CHAPTER IV

MEDIA

To KNOW
Rather consists in opening out a way
Whence the imprisoned splendour may escape,
Than in effecting entry for a light
Supposed to be without.

Browning. *Paracelsus*, I.

THE days when health education was regarded as synonymous with the delivery of public lectures are, one hopes, gone for good. Educators now have at their disposal a whole battery of visual and auditory aids with which to vary and enliven their teaching. Sometimes, however, they give the impression of being so embarrassed by this richness of media as to be incapable of exercising discrimination in their use. Pamphlets, posters, films, radio broadcasts and the like are simply tools, as are hammers, chisels, mattocks and spades, and equally require using on the appropriate occasions and in the appropriate manner. It is, therefore, worth while to consider the various media of health education and their relevance and applicability to different situations.

Such consideration calls, first of all, for a recognition of the fact that there is not, as some enthusiasts would have us believe, anything unique about the methods of health education. Health education is merely one strand of the total educational weave and, for our present purpose, all that is required is to apply general educational principles to this particular strand. Health education, as education generally, must provide assumptions about the way life is lived (*e.g.*, that people keep themselves and their surroundings clean), inculcate habits conducive to health (*e.g.*, that of washing hands before touching food), impart information which will provide a rational basis for habits already and yet to be acquired (*e.g.*, that disease bacteria may be transferred from hands to food), encourage healthy attitudes (*e.g.*, that of responsibility for the cleanliness and health of the community) and develop appreciations (*e.g.*, that of cleanliness and health as æsthetically desirable).

The common statement that health education during the first few years of life can only be along the lines of habit training and that of older children and adults along the line of factual instruction is an over-simplification which amounts to an error. All aspects of health education must be carried on at all stages of the educational process, albeit certain aspects are of greater importance and more

easily dealt with at particular periods. In assessing the relative values of health education media, moreover, all these aspects require consideration.

The Environment

The most potent of all educational media is, of course, the environment. It is the type of house into which it is born and the type of parents and siblings in its family which provide the material upon which the infant, long before it can speak or understand speech, bases its assumptions about the way life is lived. It is the type of school building and the type of school teacher which mould later assumptions about desirable ways of life. It is the type of building in which clinics are held and the type of doctor and nurse in attendance which build assumptions about the nature of health services. Any scheme of health education must, therefore, give high priority to the improvement of the physical and human environment; for in so far as environment negates teaching, environment is likely to win. To take one small example: much money and more educational effort have been expended in persuading people to wash their hands after defæcating and yet, almost without exception, our public health authorities charge their citizens who visit public conveniences twopence to do the former after they have paid a penny to do the latter! *

The Spoken Word

Though learning by doing is making some headway, the more usually recognised teaching medium is still the spoken word. Fine variations of tone and emotional loading render possible not merely factual instruction but the re-orientation of listener's attitudes, while the fact that the sensitive speaker reacts delicately to each nuance of the audience's response makes speech a tool of a finesse which no material medium can approach. Many speakers, however, fail to use this fine implement with the delicacy it deserves. It is, in engineering language, a multipurpose precision tool, but unless the speaker has a clearly defined purpose in mind he may use it always as a sledge-hammer. If the purpose is persuasion, one technique is required; if the arousing of interest, another; if factual instruction, yet a third.

Speech as a medium of factual instruction, moreover, must be delicately adjusted to the particular audience. Those without educational training and experience usually tend, in occasional talks to children or the general public, to over-estimate greatly the amount of information which can be effectively absorbed in three-quarters

* Since this was written, several authorities have provided free washing facilities.

of an hour. It is necessary to cut down one's message to the very bones and, indeed, preferably to one large bone on each occasion. The bone can be presented from many angles and illuminated by lights of many colours, but it must be one bone and not a whole bag of bones. Simplicity, specificity and varied repetition are the keys to successful oral instruction. Those with medical or biological training, moreover, need usually to be particularly on their guard in the matter of language. Words like "myopia" and "hypermetropia" are all very well in specialist journals, but they have no place in popular health education. We want to inculcate a radical understanding of living things, not a verbal facility with the roots of dead languages.

Another failing in much health teaching is that of irrelevance to social conditions. Apart altogether from the debatable point of its health validity, the common advice to take daily baths and to clean the teeth after each meal is, for most of the population, quite futile. In the ordinary working-class home, a daily bath for each member of the family is an impossibility. Even if a bath and running hot water are available, the expense of heating has to be considered and the revolution which such a practice would involve in family routine is altogether too great. As for the cleaning of teeth, if most children can be got into the habit of brushing them regularly each night before going to bed, we are not doing too badly. A drill which is unrealistic in terms of the starting point of present popular habits can succeed only in further divorcing what is said in health teaching from what is done in health practice. The general who is quite out of touch with his army cannot lead it.

The spoken word is, it must be emphasised, most effective as an educational medium when it is not all from one mouth. No school teacher would dream of giving a half-hour lecture to his children, as visitors to schools often do. The effective lesson is one of question and answer and discussion, of continuous interplay between teacher and taught. Fortunately this method has now spread outside the classroom, and discussion groups, quizzes and the like are playing a big part in the health education of the general public. Two other school techniques, however, have hardly yet penetrated adult education. Teachers know full well that oral instruction is most effective when combined with manual activity and, wherever possible, the health word is linked with the health deed. Yet how rarely do plans for the health education of the public provide for the public to *do* anything! Teachers know, moreover, that much of their most effective education is done in casual conversation with their pupils. Yet how rarely do medical practitioners use friendly chats with their patients as a means of health education! Bright posters in the waiting room may be attractive, but bright words in

the consulting room would be more effective. It would, incidentally, be most valuable if general practitioners were to arrange periodic meetings to which all their patients were invited and health topics discussed ; but before this could be well done the bogey of " unprofessional publicity " would have to be laid.

Printed Material

After the spoken word, the media most widely used in health education are leaflets and pamphlets. There is no reliable evidence about their value when broadcast at random, but there is ground for strong suspicion that it is very little. Certainly, when there is a limited sum of money to be spent on health education, the purchase of masses of leaflets for free distribution is of doubtful priority. Relevant leaflets and pamphlets should certainly be available to all attending public health meetings and exhibitions, but one suspects that more will be read of a hundred sold at a penny each than of five hundred distributed free. This consideration does not apply, of course, to free distribution to certain people on certain occasions. After a lesson on the housefly, most children would read an attractively written leaflet on the protection of food and the disposal of garbage, and might build up a most valuable scrapbook from such free material. After an examination at the ante-natal clinic, most women would read a simply written pamphlet on health during pregnancy. After discussion with the mother, the health visitor might fruitfully leave a free booklet on the sex education of children. It is simply a question of choosing the occasion and the means of distribution in such a way as to increase the likelihood that recipients will value what they are given and read and digest it. Far too much public money is at present spent on providing work for street cleaners and paper aeroplanes for small boys.

Somewhat similar considerations apply to the use of posters and charts as media of health education. If they are to be of real value great care must be exercised in deciding just how and when they are to be used. A fairly clear distinction can be drawn between the public poster whose purpose is to force attention to some matter of health importance, the more intimate poster whose purpose is to influence people's sentiment towards some aspect of health, and the instructional poster or chart whose purpose is to explain the relevant health facts to the minority already sufficiently interested to be willing to learn. The amount of wording which the poster can effectively carry, as well as the simplicity or complexity of its design and message, depends upon the circumstances under which it is expected to be used.

The first type, for effectiveness, must be so widespread as to be virtually unavoidable. Good examples of this are the enormous

poster campaign on venereal diseases during the early nineteen forties and the similar campaign for diphtheria immunisation. But here the "law of increasing returns" applies. A few scattered posters will be almost useless, lost among the advertisements for cosmetics, underwear, beer and tobacco. Only when the posters appear on nearly every hoarding are they effective. Anything much less than saturation is waste.

The second type of poster is exemplified by some of the components of the wartime "Fighting Fit" Exhibition. The man in pyjamas at the open window would, if displayed widely on the public hoardings, probably be taken as an advertisement for fabrics or perhaps for health salts. As part of an exhibition in a clinic or welfare room, however, it can carry out its intended function of influencing sentiment in favour of fresh air. In its proper environment its meaning is clear and its message effective : in an inappropriate context it may be positively misleading.

The third type of poster or chart is similarly valuable only in certain rather clearly defined circumstances—namely, the circumstances of having a viewer or viewers close enough to see it clearly, interested enough to wish to study it, and with time to spare for close examination. Apart from the school and lecture room, such a concatenation of circumstances probably occurs most frequently in clinics and waiting rooms. A great deal of most valuable health education could be carried out by the effective utilisation of such opportunities. Instructional posters on the health of the mouth and teeth might well be displayed in the dentist's waiting room ; charts explaining how communicable diseases are spread in the doctor's ; child care charts in the infant welfare clinic ; and so on. If this is done, however, it is important to ensure that the display is carefully selected, kept clean, and changed frequently. Nothing is more depressing than to see a clinic thoroughly plastered in posters obviously put up at random as a means of decorating drab walls and left up indefinitely until their dirty and dejected state negates their exhortation to cleanliness and vigour.

The popular Press as a medium of health education is a virtually unknown factor. During the last few years almost astronomical sums have been spent in newspaper advertisement, especially about venereal diseases and diphtheria immunisation, and it is very difficult to assess the educational return. It seems likely, however, that the same sums of money, if devoted to other media (and perhaps especially to the "mechanical toys" discussed below) would have been better spent. At any rate, it is clear that nothing short of such vast sums can be of much effect except in the case of local newspapers, in which large display space may be bought cheaply. These local papers, moreover, provide other opportunities

for health education. A single person who writes frequent letters to the editor on topical health matters can exert wide influence ; while the provision of short news paragraphs about the activities of the local clinic, the local school medical service, and so on, is also most effective. It generally seems, indeed, that health education opportunities bought in newspapers must be bought dearly ; while excellent free opportunities go a-begging.

Film and Film-strip

The health education media so far considered are all old and well established, but there are other more modern media whose potentialities have as yet hardly been explored, and perhaps prime among these is the film. The great advantage of the film (apart from its unique ability to portray motion) is that it carries conviction, but this is also a great danger. The old comment " It must be true because I read it in the paper " is giving way to " It must be true because I saw it on the screen." Educationists must certainly regret such uncritical acceptance and strive to abolish it but, so long as it exists, it might as well be utilised for desirable ends. In using it, however, the lesser end must never be allowed to obscure the greater ; and the health propagandist who produces films which encourage unthinking acceptance has no right to the title of educator. Some degree of scepticism is essential to mental health, and healthy bodies are dearly won at the cost of unhealthy minds.

Anyone who is familiar with the health films which in the past have been produced in Britain must be somewhat depressed by the general level of their technical quality. In part this is a matter of finance for, while commercial producers may spend half a million pounds on a film, an educational organisation can rarely spare more than a thousand or two. Some of the films produced by the Ministry (now Central Office) of Information are of a high standard of excellence, yet even today something of the old " magic lantern " attitude seems to cling about health education. It is too often assumed that a public used to the emotional appeal of commercial film stars, the technical excellence of commercial films and the luxurious comfort of commercial cinemas, should flock to see inferior films of impersonal germs projected in uncomfortable or draughty halls.

Probably the best solution is to distinguish clearly between short sentiment-affecting films for the initially uninterested general public, and longer instructional films for minority groups already interested and willing to observe actively rather than passively absorb. The former are probably most effective when slipped into commercial programmes and the latter when used in illustration of lessons and lectures, while the common practice of showing a mixed bag to

mixed audiences is of doubtful value. There is, moreover, a strong body of competent opinion that, while the first type of film must have a sound track, the second type may perhaps preferably be silent. Certainly for some years ahead the majority of school projectors will still be silent and the recent tendency to produce only sound films cuts out an enormous potential audience.

One point to which local health authorities might give consideration is the possibility of fixing up "film corners" in their clinics. By the use of a translucent screen, it is possible to project an image of three or four square feet which is clearly visible in daylight and, if one of the assistants were to put on the same short film every half-hour or so, changing the subjects each week, the effect would probably be not only the health education of the mothers waiting, but also greater attendance at the clinic.

The film strip, which before 1940 was little used in Britain, is now clearly set to take an important place in visual education. The cheapness and portability of the projector and strips, together with the fact that strips can so easily be made from personal and local materials, constitute a great attraction. Little skill, moreover, is needed to operate the apparatus, which could well be placed in clinics and waiting rooms for attenders to work for themselves. Health visitors might also, in some cases, be able to take a projector on their rounds and give five-minute showings in selected homes. Some of the newer models of projector are so light and portable as to make this quite feasible apart from the more obvious uses in schools, clubs, adult classes and the like.

The strips themselves, like any other educational material, need careful preparation. Merely stringing together a batch of photographs which happen to be at hand is quite useless. The great advantage of film-strip over moving film (not counting cost) is that any one picture can be left on the screen for examination at leisure, so it should be worth examining. Each sequence must be designed to fulfil a particular function and each individual frame executed expertly. Well made film-strips are invaluable, especially for dealing with topics that require repeated or detailed exposition.*

Radio and Television

It is unnecessary to emphasise the enormous possibilities of radio in health education, for most homes have a wireless set. Health education by radio must not, however, be too "serious" if it is to reach those who most need it. Very few speakers have the capacity to give straight talks with wide popular appeal but, fortunately, very few such speakers are needed, since one may reach a million. In recent years, moreover, we have seen the development of some

* For a list of selected films and film strips see Appendix X.

excellent discussion programmes bearing on various aspects of health, while dramatic presentation of health material has also produced some good programmes. Health educationists (whether teachers, youth leaders, nurses, medical practitioners or others) could, moreover, make manifold the value of such programmes by the simple device of obtaining advance advice of programme plans and drawing the attention of those whom they serve to what is forthcoming.

It is a great mistake to look upon radio as primarily a "mass" medium of education for, in one way, it is the most intimate medium. By no other means, except occasionally by personal visits, is it possible for the health educator to obtain entry into the private family circle. Radio has, therefore, a peculiar intimacy which is often overlooked. So often medical and scientific broadcast speakers give the impression that they are too conscious of the millions of their prospective listeners and not sufficiently aware that their audience is, in fact, Mrs. Jones peeling the potatoes or Mr. Smith shining his shoes.

Real awareness of this fact would lead health educators to consider carefully the topics appropriate to the likely listeners at different times of the day and the programme techniques most likely to seize their attention. Parental care, infant welfare and home hygiene are specially the concern of the housewife and therefore suitable for morning periods and after-lunch programmes; but they are also of great importance to husbands and fathers and should not be entirely neglected in their listening hours. Weekend listening tends to be family listening and therefore provides an opportunity for health broadcasts of wide general interest. Children's programmes might include occasional health rhymes, health plays, etc., but they must be very brief, very simple and technically excellent—for it would be folly to destroy what might be good entertainment by ill-prepared health material. In the evenings, except for rare talks at the peak listening hours on matters of urgent public health importance, it is perhaps hardly to be expected that health education can compete successfully with music hall for the attentions of the million. This is, however, not a reason for neglecting the interests of the thousand; and there should be talks, discussions and feature programmes on various aspects of health for that educated and intelligent minority of the community which is small in number but great in influence. And, if radio were to be used wholeheartedly for health education purposes, instead of the warning that neither the broadcasting corporation nor the speakers can answer listeners' letters, there would be a warm invitation to write in with queries—and a State-financed bureau to send helpful answers.

In America, with its scores of low-power local transmitters, radio is widely used by State and County Boards of Health for giving talks of local interest. In Britain, with its few high-power transmitters, nothing of this sort has been possible. One may reasonably hope, however, that it will not be many years before the frequency-modulation system of transmission is widely adopted and we have enormous opportunities for such local initiative.

With the rapid spread of television, new problems and new opportunities face us. The addition of visual to auditory power makes it clear that, used with responsibility and imagination, television could be a most potent instrument in raising the general level of health knowledge and health behaviour of the whole community. It is equally clear that, used carelessly and without a sense of social responsibility, this same mass medium could do enormous harm. It is, therefore, incumbent on all educators to use their special knowledge to plan the proper use of television, and their rights as citizens to insist on it.

Mechanical Aids and Exhibitions

All the media so far concerned have already been used in varying degree and with varying success for health education, but there are many other possibilities waiting to be explored. Why should those ingenious and fascinating mechanical " toys " be left exclusively to the seaside promenade and the pin-table saloon ? Could not the same machine which salaciously invites viewers to see " what happened on the wedding night " be adapted to show what happens when a child is inoculated against diphtheria ? Could not the device which causes the required railway timetable to pop into view when the appropriate button is pressed, be restocked with cards informative of different aspects of health ? Would it be so very difficult to devise a " quiz cabinet " which lights up when the button showing the correct answer to some health query is pressed ? One can imagine the enthusiasm with which citizens old and young would visit a " health arcade " planned on such lines in a busy shopping centre. Which local health authority, one wonders, will first fully realise these possibilities ?

The Health Museum at Cleveland (Ohio) has shown the way, with its " transparent man " whose internal organs may readily be seen, its " posture lady " who straightens up her shoulders when a foot treadle is depressed by the visitor, devices by which visitors measure their own lung capacities and hand grips, really large models of heart and ear and other organs which demonstrate clearly both structure and function, carefully executed models of the stages of embryonic development and birth, visual representation of vital statistics, displays illustrating food facts and fallacies, mechanical

dioramas with moving figures and backgrounds—indeed, all that should distinguish a museum of health education from a museum of pathological specimens.

Closely allied to the museum is the exhibition. The occasional grand exhibition at great fairs is, indeed, so closely allied as to need no further consideration here. There are, however, other possibilities which must not be overlooked. Travelling vans for rural and suburban areas, railway coaches for large town stations, shop windows in busy streets, each present their special opportunities and pose their special problems. Certain general principles, nevertheless, apply to them all.

All exhibitions need simplicity of layout, unity of theme, novelty of presentation, harmony and balance of colour and proportion, and ingenuity of planning. All loan exhibits must be light and yet strong, easily unpacked and erected, and not too expensive of replacement (for even the most fool-proof instructions for handling are eventually defeated by encounter with a fool far greater than had ever been imagined).

Simplicity, it should be noted, does not mean over-simplification. If a topic cannot be represented by a model or other device without the essential simplicity being misleading, it is best omitted. To mislead is no advance on leaving in ignorance.

It is, incidentally, important to decide upon the audience to which the exhibition is directed, so that it is neither baffled by too great complexity of technical detail nor insulted by oversimplified presentation of the obvious. In other words, the one exhibition will not do for the general adult public, children and specialist conferences.

Exercise of Discrimination

Thus, whatever the media available, careful consideration must be given to their utilisation.* To use a medium merely because it happens to be at hand is equivalent to using a nearby axe instead of a mislaid razor—it may be possible to do the job, but it would have been a good deal better to search out the proper tool. And, once the proper tool has been found, it needs to be used properly. We can no longer tolerate blundering efforts at health education with whatever media lie to hand and in whatever fashions first occur to us: our approach must be that of the enthusiastic yet discriminating craftsman.

* Sources of health education material are listed in Appendix VIII.

CHAPTER V

HOME

> Train up a child in the way he should go : and when he is old, he will not depart from it.
>
> *Proverbs.* XXII, 6.

When the aims of health education have been visualised, its many-sidedness appreciated and the appropriateness of various educational techniques estimated, it becomes necessary to determine the part to be played in the total health education effort by the various categories of educator. It is clear that all who exert any influence upon any other, which is to say the entire population, affect in some degree the general level of health behaviour ; but the influence exerted by parents, teachers and health workers is so marked as to require special consideration. Most directly important to young children are parents and teachers, and of these especially the former. By the time children enter the formal educational system their patterns of behaviour are already to a considerable extent determined and, even into adult life, the home environment is usually more potent than that of school or consulting room. Prime place in health education, as in education generally, must therefore be taken by parents.

There still persists an astonishingly widespread belief that children are " sent to school to be educated " and, the sooner this belief is replaced by a recognition that children are sent to school to have their basic home education supplemented, the better will their education be. Such recognition, however, implies more than mere complaints by professional people that parents fail in their duty towards their children. It is also necessary for teachers and others to pay the most careful attention to the home circumstances of their pupils, learn all they can from the parents, give the greatest possible help to parents in their educational efforts, and develop a sympathetic understanding of the difficulties facing the often harassed and overworked housewife. Parents usually, and quite rightly, resent self-righteous efforts by teacher or doctor or social worker to lay down the law about how they should conduct their homes ; but genuine and modest helpfulness is warmly appreciated and tactful advice often acted on.

If parents can be brought to play effectively their basic part in health education, teachers and others will have a firm foundation to build upon : otherwise, not merely will they be building on sand,

but the structure they are attempting to erect will be continually undermined by the powerful currents of home life. It is in the home that children, from the earliest days, adopt prime assumptions about the way life is lived, acquire the fundamental habits of living, and develop those emotional attitudes necessary to mental health. It is in the home also, a little later, that children gain the rudiments of factual knowledge relevant to health ; and it is pre-eminently the home that inspires those ideals which permanently motivate health behaviour. Teachers and youth leaders, doctors and dentists, health visitors and social workers can all do something, but parents can do or undo nearly everything.

Early Assumptions

It is generally accepted by all who know children well that the conditions of life during the first few months after birth exert a profound influence on the whole nature of the individual. If a child is from the earliest days handled lovingly, without sudden jerks and unexpected movements, it will make the unverbalised assumption that life is pleasant and secure. If its parents and older siblings remain unagitated in minor domestic crises, it will assume that life is calm and unharassed. If it is fed, washed, potted, left to kick and laid down according to a reasonably fixed timetable, it will take it for granted that life has a smooth rhythm. If it is successfully suckled and cuddled, it will feel from the start that the world can be a snug and friendly place. We adults may know only too well that life has in it elements of unpleasantness, insecurity, harassment, irregularity and unfriendliness ; but the young babe grows better at first if we do all we can to protect him from such knowledge. Sooner or later it must learn of the world's imperfections, but it should not suffer from them too soon. The provision of hygienic nurseries is no doubt desirable, but lack of sterility may be less harmful to the infant than lack of security, and the really important thing is that he should come to feel that the world can satisfy his most urgent needs.

With each passing month the child absorbs more and more of the way of life of the family in which it is reared, and thus the daily home routine is his most potent educator. Merely by observing that his parents and siblings dress and undress without self-consciousness and make no obvious effort to hide their bodies from each other, the child assumes that the body and its functions are natural and in no sense shameful ; while, by observing that older people normally close the lavatory door whilst evacuating and clothe themselves before going out, he learns that a certain degree of privacy is normal and accepted. The fact that the older members of the household help each other in all sorts of little ways leads to the assumption

that this is the way one should behave, just as the fact that they take some care with the cleanliness of themselves and their surroundings causes the automatic acceptance of a reasonable standard of cleanliness. If the daily behaviour of the family makes a regular bed time and regular rest time appear the "done thing," the child will make that same assumption. Similarly, the acceptance of proferred food without fuss, the respecting of one's own and other people's property, the exercise of some degree of care and the fairly stoical acceptance of minor accidents, all depend on the example set by elders. This is not to say that a child will never fail in any of these respects and never needs explicit training and instruction, for the socialisation of children to the cultural pattern of their society is not to be accomplished without difficulty. It is, however, the case that the child who unconsciously absorbs from a well-functioning family these generalised assumptions about the way life is lived will be the more amenable to specific habit training, the more willing to discuss health behaviour rationally and the more likely to develop desirable health attitudes.

The Basic Habits

During these early pre-school years it is important that children should, in addition to adopting some general assumptions about behaviour, acquire certain specific behaviour habits. First in time and in importance are the habits of satisfactory feeding, voiding and sleeping ; and most children achieve rhythmic functioning without very great difficulty. In other cases, however, there arise various problems which require consideration.

Any major difficulty in the establishment of satisfactory breast feeding or in the process of weaning is a matter needing the skilled guidance of the doctor or nurse, but it is in general true that success is more readily achieved by mothers who take success for granted. It is, moreover, important to recognise that each child is an individual with its own biological peculiarities and that, while primers of parentcraft can be invaluable general guides, their recommended regimens should be modified without qualm if experience shows modification to suit better any particular child.

Habits which consist very largely of the disciplining of natural functions, such as the evacuation of bowel and bladder, can be inculcated only by regular practice. Most mothers in England and the U.S.A. have been told that they should hold out their babe after each meal and many make most conscientious efforts to do so. In some cases failure on the part of the child to have a motion is regarded not as a minor irregularity but as a major calamity, and the mother develops an absurdly disproportionate emotional tension. Such tension is almost inevitably communicated to the child and

serves only to accentuate the failure which has aroused it. The mother who accepts placidly a child's failure to evacuate at request, even if it leads to a dirty napkin later, is more likely to achieve successful training than the over-conscientious mother who regards a soiled napkin as a stain on the family's escutcheon. It must be remembered that teething, illness, dietary changes, emotional upsets, climatic changes and many other factors may separately or in combination disturb the rhythm of bowel action. Moreover, cleanliness achieved by reflex action through early potting, once it breaks down, may be exceedingly difficult to re-establish. Thus efforts at forcing regularity by too frequent or too prolonged potting are unlikely to succeed and, if they do succeed, are likely to do so only at the cost of considerable emotional stress. In many countries, no attempt at cleanliness training is made before the first birthday; yet the final achievement of sphincter and bowel control is not later there than here.

The third of the basic health habits, that of taking regular and sufficient sleep, is to be aimed at from the earliest days. It is a matter of common sense that the child should be laid down to rest in surroundings as quiet as possible, on a pillow not too soft and under covers warm enough but not heavy or stifling, in shade rather than bright light, and in that state of contentment which comes from a satisfied belly, dry and comfortable clothing, and sufficiently exercised muscles. Only by providing such optimal conditions can it be discovered what is "sufficient" sleep for any particular child. There exist, it is true, tables showing how much sleep is desirable for children of different ages, but such tables are at best useful averages and at worst a source of great worry to unimaginative parents who forget that their child is an individual personality and not a statistical abstraction. Children of a given age vary greatly in their sleep requirements and, provided that a child sleeps contentedly and wakes from his sleep refreshed, it is no cause for alarm that he sleeps more or less than does the standard textbook child. Some babies need to sleep little and kick much, some to sleep longer and kick less. The advice of the health visitor or the clinic doctor or nurse should be sought and followed in this as in all matters of child health, but a wider recognition by these health workers of the existence of individual differences among children would reduce the amount of unnecessary worry among parents.

Table and Toilet Training

As children leave the "baby" stage and acquire greater motor efficiency they naturally want to do more and more for themselves. Gradually they should learn to attend to their own toilet needs, to accept responsibility for the cleanliness of themselves and their

belongings, and to help with the domestic chores. What one child can do with ease, however, another may do only with great difficulty, and the setting of too high a standard may cause the development of damaging feelings of inadequacy. This training should, moreover, aim mainly at the development of general attitudes, for the number of specific habits which can successfully be inculcated without making the child's life an intolerable burden is somewhat limited. It is good that children should, before the age of five, help occasionally in laying and clearing the table, tidying up the room, weeding the garden, fetching and carrying for the baby, and so on ; but one must never expect them to do all these things habitually as part of a rigid routine. If habit training, as distinct from attitude formation, is not to become ossification of behaviour, it must be concentrated on comparatively few procedures.

Although it is unrealistic to expect children to keep clean, it is reasonable to insist that they should have clean hands before touching food. If it is made quite clear that hands must be washed before each meal and that no eating will be allowed until they are washed, children's love of food will soon overcome any dislike of washing. In this, as in all other habit training, the essential element is consistency. One may be feeling tired and the child be feeling fractious, and one may decide that it is really not worth insisting on clean hands " just this once " ; but to allow a lapse is to undo the work of many days. It does not, perhaps, matter much if, on occasion, one conveniently " forgets " to tell the child to wash his hands ; but once instructions have been issued and the child's attention thereby drawn to what should be done, it *should* be done. All this, of course, assumes that the home has reasonably good washing facilities.

After preparation for the meal, comes the meal and, in all too many cases, those irritating likes and dislikes and fads and fancies with which some children wield power over their parents. Most adults have food preferences and some have a genuine dislike for certain foods, so it is not surprising that children also may be particularly fond of some things and less fond of others. Such reasonable discrimination, however, is very far removed from senseless fussiness and the problem is to allow the former without opening wide the gates to the latter. There is great individuality in taste sensations ; what may be a slight flavour to one person may be of overwhelming strength to another. Food dislikes, moreover, may be due to unconscious mental associations with previous unpleasant experiences ; while many difficulties at table are due to unreasonable insistence on an adult standard of delicacy in manners. Generally, however, if parents enjoy eating, their children will do likewise ; if parents chew their food thoroughly, their children can

be persuaded to do so ; and if parents make of meals a pleasant social occasion, their children will feed in a reasonably civilised manner. It is useless to expect Mary to eat up her semolina pudding if mother announces that she dislikes it, or Freddy to chew his meat well if father bolts his in large pieces ; while to expect Freddy and Mary to refrain from playing with the cutlery while father and mother read the newspaper at meals is grossly unfair on the children. It is not always by any means easy to avoid the development of food faddishness, but parental example is potent. In all this it is, of course, necessary to preserve a sense of proportion. While it is desirable to dissolve resistance to particular foodstuffs, this is, after all, a comparatively small matter in the whole matrix of life ; yet some parents behave as if a child's reluctance to eat a plate of prunes were a major catastrophe and, in their determination to succeed in this minor matter, succeed only in arousing the child's opposition, impressing on him that a sure way to secure parental attention is to be faddy about food—and probably confirming his repugnance for prunes. Finally, one should not forget the obvious point that if one wants food to be eaten, one should cook and serve it attractively.

That part of the food which is not digested and assimilated must be voided and, if this is unduly delayed, constipation results. Press publicity for proprietary purgatives seeks to give the impression that the way to avoid constipation is to take daily doses of the advertised products, but no child should be allowed to grow up in this belief. Physicians may on occasion prescribe laxatives, but they agree that in general the way to ensure regular elimination is to consume sufficient roughage, water and vitamin B and to make a habit of sitting on the closet regularly. The inculcation of this habit is an important element in the early health education of children. It is impossible to prescribe a fixed frequency of motion for all children, for they vary in this as in everything else. Nevertheless it is well to train children to attempt a motion at a regular time, say shortly after breakfast, each day. If, however, a particular child habitually evacuates at some other time of the day, or perhaps less frequently, matters can be left at that, for there is no particular virtue in in having a motion at 9 a.m. rather than 4 p.m. Nor is there any value (indeed, there is positive harm) in treating a child as a malingerer if his frequency of evacuation does not coincide with what the parent thinks to be desirable or the parentcraft book states to be normal. Over-insistence on voiding unused food, like over-insistence on eating unwanted prunes, may have an opposite effect to that intended. Any persistent constipation, of course, calls for advice from health visitor or psychologist or doctor, but in most cases proper feeding, adequate exercise and regular sitting on the closet produce the desired result.

The emptying of the bowels should generally be followed by the washing of hands. One cannot avoid a feeling of sympathy for the child whose parents expect him always to maintain an adult standard of bodily cleanliness, but there are some occasions when scrupulous handwashing is desirable, and this is one of them. It is, however, the more likely to be regularly practised and become habitual if the child is not expected to wash his hands every time one of his parents happens to notice that they are dirty.

Another habit of cleanliness which has a valid hygienic basis is that of the proper use of handkerchiefs. Much infection is air-borne and disseminated by coughing and sneezing, and it is important to train children from quite early days to smother all coughs and sneezes with a handkerchief. This should be big enough to be effective, and large squares of clean rag, even if not so elegant, are far preferable to dainty little " baby " handkerchiefs. It is perhaps too much to expect that toddlers will of their own volition refrain from storing dirty handkerchiefs in the secret recesses of their pockets, but this is a matter in which parental ruthlessness is well justified. The child who grows up habituated to the proper use of handkerchiefs frequently replaced by clean ones has acquired a most valuable habit.

Play and Sleep

A healthy child, with good food in his belly, is full of life and ready for play and fun. About the general physical and mental value of exercise and play it is not necessary to say much, for most adults recognise the value and most children will play without urging. Some children require mild encouragement to obtain sufficient exercise, but when the parent's estimate of the child's exercise requirements are at variance with the child's practice, it is likely that the parent's estimate is mistaken. Certainly, if a child is noticeably lethargic, it may be suffering from malnutrition or some bodily or emotional defect or inadequacy and it will be well to ask the advice of a health worker ; but generally, given the opportunity, children will play as much as they need.

One parental problem is that of deciding when and to what extent to interfere with their children's play. At the extremes of behaviour, there is little difficulty. One would interfere to prevent a child's playing with the contents of a dust bin or the water in a closet pan, to protect a three-year-old from battery by a six-year-old, or to stop a child about to jump from a bedroom window ; but it is often very difficult to know just where to draw the line.

Many parents object to their children's playing in " dirt," without troubling to define that word and often with the implication that everything which they call " dirt " is necessarily unhygienic.

Children gain both emotional and sensuous satisfaction and an outlet for inventiveness and discovery, and neuromuscular skill, by playing with sand, mud, clay and so on, and should be prohibited from such play only when a genuine danger to health exists or when there is a sufficient social reason. Most children learn to share their toys and take their turns without quarrelling, to be friendly and helpful and tolerant to other children, and to stand up for their own rights when necessary ; parental interference is wise only on the rare occasions when real hurt or a harmful sense of injustice occurs or appears imminent. Children must learn to exercise care in their play without becoming unduly timid, for valour is the equal part of discretion ; they must refrain from playing with fire or with gas and electric appliances without developing a superstitious fear of them ; they must learn caution in crossing roads without being reduced to a bundle of nerves by an approaching lorry. In all this, what is important is that parents should not merely guard their children from dangers and teach them safety, but should do so with a calmness of manner and voice that instils restrained confidence rather than fearful restraint.

Under primitive conditions, healthy children would no doubt take sufficient rest just as they would take sufficient exercise ; but our children live under highly artificial conditions, and, in many cases, the assuring of sufficient rest to their children is a very real problem for parents. It is not merely that the roar of internal combustion engines, the tooting of horns and the ringing of bells cause disturbance, for children often become immune to such noises surprisingly quickly. Greater difficulty arises from attractive evening radio programmes (perhaps designed for adults but obviously appealing to children), from the light evenings due to the imposition of summer time and double summer time, and from the example of the children of neighbours who are allowed to stay up late. And perhaps greatest of all is the difficulty of deciding with any certainty exactly how much rest any given child needs.

Nevertheless, many children show clear signs of insufficient sleep—poor appetite, fatigue, bad posture, general debility and so on—and many more show signs less clear, but significant. It is, therefore, fairly safe to say that most children get too little sleep and that most parents should be more insistent on an early bedtime and, in the case of younger children, on an afternoon rest. Here, as elsewhere, consistency is the key to success and, once a routine is decided on, it should be insisted on. But here, as also elsewhere, the greatest success of all is that of the parent who can make occasional exceptions whilst retaining a basic consistency, and can let a child stay up late for a festival or the visit of a special guest without having squalls when the usual bedtime arrives the next day.

Health Instruction

It is, naturally, not to be expected that children will readily acquire healthy habits and develop healthy attitudes if parents refuse to explain their desirability when questioned. This is not to say that before telling a child to drink up his milk one should embark upon a lecture on dietetics, dental caries and rickets ; it is, however, to say that if the child asks why he should drink milk, one should give him a reasoned answer. The complexity of the reply will necessarily vary according to the child's capacity to understand and the parent's knowledge of the facts and, indeed, may in some cases consist merely of the bare statement that " milk is good for you." What is important is not so much the content of the explanation, provided that it is at least an approximation to the truth, but the fact that an explanation has been readily given in a manner which implies that it was very reasonable of the child to ask the question. And, if an honest reply leads to further questions, such as " If milk is good for you, why do you drink tea ? ", one is faced with the necessity for fuller explanation or for elevating one's own practices to the level demanded of the child—which latter is perhaps the reason why so many parents fight shy of explanation and answer all such queries with an impatient " Because I tell you to."

It is clearly most important to avoid from the earliest days anything which might cause a child to take an excessive or morbid interest in his own physical state. The really healthy person is mostly unconscious of his health and, while it is desirable that children should grow up to think of their health on occasions, the occasions should not be too frequent. It is impossible to categorise the ways in which health interest may be aroused and yet not exaggerated, for the essential factor is the whole attitude of the educator rather than any of his actions. One parent may say " Come along, now. Drink up that milk—it's good for you " and leave the impression that milk is not only good but good to drink ; another, using precisely the same words, may succeed only in instilling a feeling that milk is a sort of medicine which is really rather revolting but must nevertheless be swallowed. Nice nuances of tone, slight gestures, little shrugs and smiles : these are the things that make the difference between welcomed encouragement and resented pressure. As the popular song had it, " It ain't what you do ; it's the way that you do it : that's what gets results."

Children must, nevertheless, learn that they cannot expect their parents to do all they make their children do. Quite young children can understand that, the younger people are, the more sleep they need ; that adults can, by reason of their greater knowledge and skill, safely adjust electric fittings which children must not touch ; and that the complexities of adult life and the nearly complete

growth of adults may warrant comforts such as smoking and tea drinking which may admittedly be slightly harmful to adults but which are rather more harmful to children. Where such explanation fails, however, it is only in those cases where serious harm may ensue that it is wise to force compliance. A little humouring, such as a few drops of tea in a glass of milk, does negligible if any harm and may save many squalls. The general rigidity of pattern must yet retain sufficient plasticity to allow of the preservation of friendly personal relationships between parents and children. To impose complete, unvarying and unquestioning obedience on a child is usually possible only at the cost of stifling the development of his individuality.

Granted parents who endeavour to answer their questions, most normal children will fairly rapidly acquire a considerable store of knowledge relevant to health. They will be familiar with a simple vocabulary for the organs and functions (including the genital and voiding organs and functions) of their bodies. They will know that some small living things called "germs" cause diseases and that these germs may be spread by unguarded coughing and sneezing, by unwashed hands and by carelessly cleaned food and dishes. They will be aware that milk and cod liver oil are specially good for teeth and bones, fresh fruits and salads for skin, meat and cheese for building up strong muscle, and bread and potatoes for giving them the energy to keep warm and run about. They will know that motor cars, gas taps, electric switches, matches, fires and boiling pans and kettles can cause accidents; and that, while they should not make disproportionate fuss about minor cuts and scratches, they should get an adult to clean them and if necessary apply an antiseptic to kill any germs. They will know that babies grow inside their mothers and that pregnant and suckling mothers may be easily tired and should be given even more help than usual. In short, parents who answer their children's questions will provide them with a rational basis for much of their expected behaviour.

Thus, by the time a child goes to school at the age of about five, the general routine of his home life will have largely determined his basic assumptions about what constitutes healthy living, his specific home training will have laid the foundations of his healthy habits, his emotional reaction to the other members of his household will have firmly orientated his attitudes to health, the characters of his parents will have evoked his first health ideals, and his questioning will have brought answers which constitute a basic store of health knowledge.

Once schooling has started, it is reasonable for parents to expect teachers to shoulder the main responsibility for formal instruction, but there will still be many opportunities in the home for imparting,

in reply to questions or in relevance to family situations, knowledge relating to health. Odd references at meal times to the value of particular foods and the importance of washing hands ; references at bedtime to the values of general cleanliness, care of clothes, and adequate sleep ; explanations of how to treat minor injuries, how gradually to master household gas and electrical appliances and to light matches and heat foods in safety ; all those hundred and one elements of home hygiene—these are matters constantly recurring in family life and about which information is far more fruitfully imparted at home than at school. Facts learned with reference to concrete situations and immediately applied to practical ends are more deeply implanted than those learned in abstraction in school lessons.

The Home's Achievement

In such concrete home situations factual knowledge becomes fused with behaviour. Increasing information about germs links up with the performance of the habits of washing hands, cleaning teeth, covering coughs and sneezes and the like, at a higher level of efficiency. The growing child's adopted assumption that as he gets older he helps more in the house becomes crystallised into the habitual exercise of greater self-discipline and the specific habits of washing dishes carefully, protecting food from contamination by flies, hanging up clothes carefully on going to bed, and so on. His deepening attitude of preference for cleanliness combines with his knowledge about germs to encourage the habitual use of his own special towel, toothbrush and hairbrush ; while his developing pleasure in a high standard of achievement provides an incentive for the careful exercise of many health habits. Finally, growing out of and in turn motivating the whole of his behaviour, are his slowly forming ideals of what sort of a person he wishes to be.

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CHAPTER VI

SCHOOL

> Sir, he hath never fed of the dainties that are bred in a book ; he hath not eat paper, as it were ; he hath not drunk ink ; his intellect is not replenished ; he is only an animal, only sensible in the duller parts.
>
> Shakespeare. *Love's Labour's Lost*, IV, 2.

ALTHOUGH the prime responsibility for the child's training in health matters, as for his education generally, is the parents', the teacher has also a most important part to play. The home is certainly the more potent in earlier years but, as the child grows older, the school becomes increasingly influential. It is perhaps especially in the imparting of information that teachers can do more than parents, but they can also do much in the provision of certain assumptions, the inculcation of habits, the development of attitudes and the fostering of ideals. The teacher has the great advantage of a higher education and a professional training, which should facilitate the admittedly difficult task of planning a scheme of health education appropriate to the various stages of the child's development. Many teachers are now setting about such planning and it is, therefore, worth while to make a few general suggestions.

Programme Planning

In the first place, it must be recognised that the drawing up of a comprehensive school health programme involves much more than merely making arrangements for lessons on health. It is also necessary to provide a material environment which will promote health and to build up a school routine and tone which will reinforce the effects of the environment. Procedures should be planned for reducing the spread of communicable diseases and for dealing with minor accidents and sicknesses which may occur on the school premises. Periodic medical examinations and health education evaluations should be followed by the provision of special care and guidance for those pupils whose peculiar needs are disclosed by the examinations, while definitely handicapped children require careful educational attention in the ordinary classes, in special classes or in special schools. Finally, opportunities should be made for those teachers who so wish to improve their own knowledge and efficiency as health educators. Not all these elements in the total plan are within the competence of the teacher as such, but it is necessary always to bear them all in mind.

The precise machinery to be used in constructing the health education programme is, of course, a matter for decision by each responsible authority, whether headmaster, education committee, or ministry. Some American school systems have, however, devised machinery which is worthy of examination. A "General Aims" committee, consisting of head and assistant teachers, educational administrators, parents, physicians, psychologists, etc., is set up for the area. It draws up the general principles which are to guide the whole of the programme and estimates the main needs of children at the different age levels. This general report then goes for detailed consideration to several other committees, each dealing with it from a different angle. Various "Subject" committees, consisting of specialist teachers, work out in detail just how each curriculum subject can be used as a medium of health education. A "Situations" committee, consisting of parents and teachers, analyses in detail the many health situations met with by the child in its daily life and the ways in which they may be utilised for health training. A "Premises" committee, including teachers, school doctors and caretakers, studies the whole range of the schools' equipment and facilities for lighting, heating, ventilation, voiding, washing, drinking, eating and so on ; seeing whether each item is up to a satisfactory standard or how it can be improved, and how its merits and demerits can be utilised for educational purposes. A "Programme" committee, including teachers and doctors, examines the daily school programme and considers whether it could be improved from the point of view of pupil health. A "Home and School" committee, consisting of parents and teachers, examines home and school routines, noticing any points of conflict, suggesting how they can be smoothed out and generally working out ways in which the school and the home can reinforce each other's education. A "Pupils" committee, consisting of a few of the older and more intelligent pupils, makes suggestions from the child's point of view. Finally, a "Steering" committee, consisting of a small number of teachers, builds the suggestions of all the other committees, as far as possible, into a model school curriculum and programme.

It seems unlikely that such an elaborate committee structure would appeal to the majority of teachers, who are traditionally chary of anything savouring of mere "talk and typing." It is, nevertheless, clear that each of the above-mentioned study objects merits careful consideration and, even if a much simpler machinery for their examination is devised, this multiple committee structure does serve as a warning against imagining that a satisfactory health education programme can be built up on the basis of a few casual chats between two or three members of the school staff. Many

different points of view have to be considered and what may well be missed by the teacher may be very obvious to the caretaker, doctor, psychologist, parent or pupil.

There is, moreover, great value inherent in producing a school health curriculum by such widespread co-operation and detailed study. The teachers and others who are drawn into the task will probably find that their own understanding of what constitutes health and their own appreciation of the possibilities of health education mature in the process of curriculum building. The absence of such maturation on the part of those who are to do the teaching is perhaps the strongest argument against the adoption of a curriculum ready-made by outside "experts." The imposition of such a curriculum by an education authority, or even its voluntary adoption by a school, undoubtedly makes for speed; but the teachers cannot feel that it is their own offspring, in whose conception and gestation they have themselves grown, and it is hardly likely, therefore, to be as effective as a locally made product.

In such programme planning, each category of adult will inevitably learn much from the others. Teachers and parents will find the contact with doctors and nurses most valuable as a means of brushing up their own knowledge of health matters, while the doctors and nurses may learn much about the possibilities and limitations of the school. Administrative officials will hear a few home truths about the conditions in which teachers have to work, while the teachers may be surprised to know of the difficulties of the administrators. Parents will find that there are innumerable ways in which they could ease the teachers' task, while teachers will often learn for the first time many facts of their pupils' home lives. Whatever the final plan produced by this many-sided collaboration, the collaboration itself will have been invaluable.

By the time a group of enthusiastic workers has produced a health programme, it will almost certainly be found to be lacking in realism in some respects, for cool criticism easily melts in the warm glow of creation. Health education, important as it is, cannot monopolise school time, while expenditure on school buildings and facilities must be balanced against other claims on public money. It is wise, therefore, to wait a while for one's ardour to cool a little, and then to go through one's plan looking carefully for any signs of Utopianism.

Curriculum Building

So far as school lessons are concerned, there is so much that *could* be taught that vigorous pruning of possibilities is essential. This necessary selection is bound to be influenced by many special factors, such as the individual school's tradition and the individual teacher's taste, but it is nevertheless possible to formulate a few

general criteria of selection. Much guidance can be obtained from the opinions of recognised experts, whose views, although in no sense mandatory, should always be given the most careful consideration. Examples of such guidance are expert views upon the physical, emotional and social needs of children at particular stages of maturation, about which, in the much that has been written, there is sufficient unanimity of opinion to provide a reasonably firm basis for action. Further guidance is available in mortality, morbidity, accident and other statistics, which often give pointers to behaviour situations requiring special attention at different ages. Finally, however, each school must make its own selection, relying not entirely upon such generalisations as are available in textbooks and reports, but largely upon careful thought about the children attending that particular school. Close observation of the activities of the younger children and direct questioning of the older ones will provide much valuable information about their health interests. Careful analysis of the daily school routine of the pupils will disclose many situations which would be more effectively met if certain material were included in the health education course. Familiarity with the children's home and general out-of-school environment will indicate other desirable material. Thus, by a combination of some indications general for all children of the age-range concerned and others special to the children in the particular school, the basic curriculum content may be determined.

One practical point needing attention during programme planning is the extent to which instruction is to be to individual, to small groups, or to complete classes ; and, although this is essentially a matter of each teacher's personal preference, there are some general principles to be considered. It is, paradoxically, true that those elements of health behaviour common to all children are usually best taught by individual instruction, while those in which each child will differ are usually best taught to the class as a whole. The elucidation of the paradox is not, however, difficult. Those things which we all perform alike are the simple skills such as washing hands and cleaning teeth, which should be acquired and made habitual as soon as possible ; and since individuals acquire such skills at very different rates, they are best given personal instruction. On the other hand, those things in which we all differ are our responses to the continually varying situations in which we find ourselves, which depend not entirely upon habituation but also on intelligent application of a basic rationale ; and the imparting of facts and the discussion of their application to different situations is most suited to class instruction. This, of course, does not preclude personal discussion of such matters with individual pupils when that seems appropriate.

Yet while formal lessons to the whole class are valuable as a means of providing the pupils with facts difficult of access, of presenting essential knowledge in a systematic way and of discussing the appropriate health behaviour in situations in which all are likely to find themselves, there is also great value in small-group work. For example, the distribution to each small group of children of carefully prepared cards bearing pasted-on advertisements, photographs and the like, each with questions to be answered and things to be done by the group, provides opportunities for semi-independent activity which cannot be given by formal class lessons. This technique can be extended to the presentation of " projects " for the group ; as, for example, the following of the theme " Brushes " or " Water " or " Soap " or " Air " in reference to health. Such projects often draw out from the pupils an initiative and arouse in them an interest which nothing else can do.

There is, however, one danger in careful planning. Thoroughness is dearly bought at the cost of spontaneity and, while it is desirable to build a firm basis for the health education curriculum, it is essential to see that firmness does not ossify into rigidity. Topical interests should always be utilised to give life and immediate relevance to the teaching, even if that means a modification of plans. Thus, an epidemic of colds or influenza in the class provides an excellent occasion for a discussion of the means of preventing the transmission of air-borne infections ; while the imminence of a school dental inspection calls for a lesson on oral health. On the other hand, some classes may be so full of their own recent experiences as to threaten to convert every lesson into a topical talk and thus destroy all cohesion in the health teaching, and it is sometimes necessary to refuse very firmly to be tempted from the planned programme.

The Primary School *

The major service of the primary school, and especially of the school which the child first attends, is the provision of basic assumptions about the way life is lived and the inculcation of habits of healthy living. The most important element in the construction of child assumptions and ideals is the personalities of the adults, in this connection the teachers, with whom they come into daily contact and whom they love to emulate. The school building and routine are, however, also important. Fresh and clean classrooms, well-equipped and cared-for cloakrooms and lavatories, bright and airy corridors, a quiet and orderly dining room and (it will bear repetition), most important of all, happy and unruffled teachers, lay

* See note on p. 77.

firm foundations for health education. The regular practice of washing hands, using individual towels, hanging clothes up carefully, helping in the setting out of milk and clearing away of toys and equipment, begin the building of a firm structure (provided that over-insistence on niggling detail does not succeed in arousing opposition). A daily school routine which provides for exercise and rest, regularity and variety, solitude and society, work and play, security and adventure, self-expression and self-restraint, moulds a personality which will be able to continue building for itself. All this is usually recognised verbally, but only rarely is the school programme carefully scrutinised to see that it meets all these requirements.

Accident statistics make it very clear that many children of the youngest school ages are involved in street accidents, so the appropriate rules of safety need inculcating by repeated injunction and practice. Some schools mark out " streets " in the playground, put up model beacons and traffic lights, and let the children bring their own toy motor cars and tricycles for practical exercises in street safety. A visit to the classroom from a friendly " bobby " is also most valuable. There are, however, other hazards needing consideration. The avoidance of accidents in the classroom, in the playground and in the home ; the exercise of care in the use of knives and scissors and hammers ; the dangers of gas and electricity and fire ; the care of eyes and ears ; the avoidance of dangerous berries and fungi ; all need attention. It is, nevertheless, most important to exercise discretion in such safety education. If immunity from scratches is ensured at the cost of the destruction of self-confidence and spontaneity, the price is too high. It were better for a child to hit its thumb occasionally with a hammer than to be afraid of using tools, and better even to risk breaking an arm than to be deprived of the joy of climbing trees. What is needed is concentration on the avoidance of really serious accidents and, apart from that, the development of a general habit of carefulness unsullied by timorousness and allied with a sane sense of adventure.

Teachers in primary schools understand the importance of the rôle of play in education generally, and it is no less in health education. Playing at shopkeepers can impart many lessons on food and clothing, while playing at parents gives children opportunities for playing out what they know and feel about the care of babies and the running of a home and, much more important, for developing a positive emotional attitude to family life. The building up of sentences, the acting of charades, the repetition of rhymes and jingles, can all include health teaching. Drawing, painting and modelling may also play their part. Young children do, quite spontaneously and unselfconsciously, use common procedures such

as washing, bathing and tooth cleaning as play and art subjects. There is no need and, indeed, it is undesirable, to stress the health element so strongly as to convert pleasant play into unpleasant work ; but most young children, tactfully handled, are very ready to treat play and work as one.

Although in the primary school habit and attitude training are most important, some factual information relevant to health may nevertheless be imparted. It is, however, important to remember that the somewhat abstract interests of the adult are not those natural to the young child, and care should be taken to approach health lessons *via* the pupils' concrete interests. Thus, a lesson on nutritional factors would be most inappropriate ; but one on milk (the food of kittens, lambs, calves, foals and human babies) might be excellent, particularly if linked up with the school milk distribution. Similarly, whilst a general survey of microscopic pathogens would be quite unsuitable, a lesson based on the fact that one of the children has sneezed right across the classroom would be very appropriate. In this way, by utilising child interests, classroom occurrences and other topical events, the primary school could teach many of the simple health facts relating to exercise and rest, fresh air and sunshine, care of teeth and skin and hair, nutrition, clothing, disease transmission and prevention and so on. Even quite young children can learn a lot of what might be called " unsystematic human physiology."

As an integral part of such teaching, the lives and works of great pioneers such as Jenner, Florence Nightingale, Pasteur, Lister and the Curies will add human interest. If, however, such " lives " are dealt with in isolation, it is doubtful if they are of any appreciable value from the point of view of health education, for a " hero worship " attitude is not particularly calculated to promote proper response to unromantic day-by-day routine situations. Real value will accrue only if the actions of these pioneers is clearly related to the practical problems with which they were faced, even if this can be done only at a fairly simple level.

Much can also be learned by keeping animal pets, especially mammals such as the rabbit or guinea pig. The provision of suitable food, the arrangement of facilities for exercise and rest, the periodic cleaning of the pets and their hutches, the observation of the facts of mating and reproduction, all provide opportunities for health education. These opportunities, however, must be seized. It cannot be safely assumed, as is often done, that children will of themselves apply to their own lives the lessons waiting to be drawn from the lives of their pets. If the keeping of pets is to be effective in health education, the teacher must draw the pupils' attention to those lessons they are learning. Here, however, as elsewhere in

health education, care is necessary to avoid the encouragement of any undue preoccupation with hygienic desiderata.

It would, moreover, be most unfortunate if, as often happens, the child were to learn a few " health rules " of doubtful validity at the cost of intellectual integrity. Yet this is a very real danger when nature study is uncritically used as a channel for health education. To demonstrate that beans and peas need water for germination is not to prove that boys and girls should drink plenty of liquids ; to tell of the dormouse sleeping the winter through is not to prove that the child should go early to bed ; to show how the sunlight is used by green leaves proves nothing about the value of the sun to humans. Yet false analogies no less ludicrous than these are often smuggled into school under the guise of " health education through nature study."

Young children usually have a deep interest in the world around them, and this can be used to give them a better understanding of how they should adapt themselves to environmental changes. As the seasons pass and the weather changes, as sun and rain and snow and wind arrive, the appropriate clothing for each kind of day can be discussed. The value of exposing the skin to sunlight and the danger of excessive exposure, the need for protective clothing in wind and rain, the importance of changing wet clothes, can all provide material for informal lessons according to the weather. The ways in which children of other times and other lands were and are clothed are always of interest to young pupils, while the protective covering of birds and bears and other animals forms a normal part of nature study lessons. This latter leads on naturally to a consideration of the different fabrics used for human clothing, and this in turn to the ways in which children can help to keep their clothes in good condition and themselves neatly dressed.

Children can also be encouraged to regulate their daily routine in a healthy manner. For example, every teacher is familiar with the child who gets insufficient sleep, and anything that can be done in the early school years to encourage good sleeping habits is most valuable. This is peculiarly a matter dependent on parents and the securing of their co-operation is clearly the most essential step. Yet the teacher can do something to make children more amenable to their parent's efforts to get them off to bed. The probability is that some pupils in every class will have baby brothers or sisters and they can recount how the newborn babe sleeps nearly the whole day through, leading on to a realisation that the younger people are the more sleep they need and hence to an acceptance of the fact that they, the pupils, should go to bed earlier than their older brothers and sisters and their parents. A large model clock in the classroom can be used, the children moving the fingers to indicate desirable

periods of sleep. Hibernation in animals can be used as an analogy (but, like all analogies, can be too easily misused). Going to bed can be made a more attractive idea by stories and personal reminiscences of the fun of the bath, the warm glow of the towel rub, the lovely taste of the cleaned mouth, the comfort of the sleepy feeling and the snuggling down in the bedclothes. None of this will be effective in the absence of parental co-operation, but it will make easier the task of those parents who try to co-operate.

It is a commonplace that all education should start from pre-existing interests, and there is nothing more interesting to young children than their food. Here is material for much health teaching. A walk through the wheatfields can be followed by the examination of ears of wheat in the classroom and then by the general idea of starchy foods as a source of energy. A visit to a farm or a recountal of the pupils' Sunday joints leads to the idea of proteins as body-builders. A green salad at school lunch or the arrival of oranges at the local greengrocer's shop, followed by the story of how scurvy was cured or prevented on the great voyages of exploration, brings out the value of vitamins as protective foods. These three essential functions of food can be well grasped by quite young children, and can be followed by discussion and perhaps practice in the domestic preparation and serving of food. Washing hands carefully, preparing vegetables and cooking them or making them into fresh salad, laying the meal neatly in the classroom and eating it in a reasonably civilised manner are all excellent health and social training.

In much the same way the subject of beverages can be covered. If a bulb in the classroom dies for lack of water, the teacher can point out the necessity of water for all living things, including human (but must not draw misleading analogies between hyacinths and humans). The need for purity of water supplies introduces the question of bacterial contamination and perhaps a comparison in the classroom of a jar of pure tap water and a jar of pond water. The comparative uselessness of tea and coffee can be contrasted with the great food value of milk, with reference to breast milk as the food of lambs, calves, kittens, puppies and human babies. The importance of pasteurisation can be brought home by simple demonstration experiments, and the hygienic way of drinking school milk through straws can be practised in the classroom. Once started on a topic such as this, the ingenuity of the teacher and the questions of the children will continually open up fresh by-ways, each of which can lead to some new health lesson.

At various appropriate points in lessons dealing with food, the topics of mastication, digestion and voiding can be introduced. Thus the importance of healthy teeth, careful chewing, slow eating, resting after meals, and regular bowel evacuation can be stressed in a

setting which avoids any suggestion of morbid self-concern. In this way, also, the value of roughage in foods may be mentioned and the avoidance of constipation stressed in opposition to the use of laxatives. Again the topic of germs arises, in connection with bowel action, and leads to the importance of washing hands carefully after going to the lavatory. Here, or elsewhere, of course, the individual lesson is of little use unless it is reinforced by habitual daily practice made easy by the provision of proper school washing facilities.

Need for Moderation

If the idea of " germs " has been introduced incidentally on a few occasions and the children know that they are very tiny living things that may cause disease, it is possible to provide a rational basis for many personal and social health practices. The smothering of coughs and sneezes in handkerchiefs, the bedtime brushing of teeth, the isolation of cases of whooping cough and measles and chicken pox, the careful cleansing of the hands before meals, the thorough scouring of pans and dishes, the protection of garbage from house flies, are all matters within the understanding of primary school children. If each topic is dealt with when an appropriate occasion arises, it is possible to encourage a wholesome determination to prevent the spread of infection without any morbid tendency to hypersanitation. In this connection, also, children may be made aware of the functions of health workers—such as doctors, dustmen, nurses and sanitary inspectors—preferably with a visit to the class by one of the workers concerned.

The whole question of the personal cleanliness of young children is one requiring careful consideration. While it is important and reasonable to insist on washing hands after going to the lavatory or before handling food, it is unnecessary and unreasonable to demand clean hands on all occasions. While a bedtime brushing of teeth is to be encouraged, especially on the score of personal appearance, insistence on brushing them also after each meal is likely to make cleanliness a dreadful bore. While it is valuable to develop a proper pride in the care of clothes, it is an outrageous offence against the nature of sturdy children to try to convert them into little dandies. We should probably get much further and along a better path were we to drop completely the idea of " keeping clean " and replace it by " getting clean on appropriate occasions." It is, moreover, important to remember that in many working-class areas few children have their own beds and even fewer their own bedrooms, some children have neither change of underclothing nor night clothes nor handkerchiefs, many houses have revoltingly inadequate sanitary facilities and many parents pathetically shallow

purses. In these circumstances, teachers must beware of the danger of appearing utterly remote from the reality of their pupils' daily lives.

The Secondary School Curriculum *

When pupils pass on from primary to secondary school, they should already have thoroughly absorbed assumptions, well-established habits and wholesomely orientated attitudes relating to health. They will probably have gathered also a considerable but somewhat uncoordinated accumulation of health knowledge. The prime task of the secondary school, therefore, is the reinforcement of the desirable assumptions, habits and attitudes ; the systematisation and extension of the knowledge ; and, eventually, the fostering of æsthetic, social and ethical ideals. The commonly accepted principle that health education should not be considered merely as a matter for a few special " talks," but should permeate the whole school life, is particularly difficult of application in the secondary school, where children may pass each period to a different specialist teacher. If, however, the various " subject " teachers have drawn up an over-all school plan, much valuable health education can be carried out through the traditional curriculum subjects. The words " correlation " and " integration " have been so overworked in educational discussion and so little pursued in educational practice that they have become somewhat suspect. They represent, nevertheless, very real and valuable processes in the construction and operation of educational curricula. So long as school time-tables allocate periods to different studies and activities (and it is difficult to visualise a school, no matter how " free," without some such allocation), it will be important to correlate the educational content of the different periods. So long as teachers retain any educational initiative they will, from time to time, seek new organisations of subject matter in an effort to integrate more closely materials which have traditionally been divorced.

In health education, careful correlation is very easily seen to be most necessary. It is not enough merely to teach the basic facts of health in a few set lessons and hope that they will be applied generally day by day. If children are to understand how their knowledge about health relates to their daily living, they must learn to recognise the connections of this knowledge with many different situations. If they are to develop the capacity for making generalisations about what constitutes a healthy life, they must

* Throughout the book, English educational divisions are used, *i.e.* : *Nursery School*, 5–7 years, *Primary School*, 5–11 years (with sub-divisions of *Junior School*, 7–11 years), *Secondary School*, 11 years and older. Readers in other lands may easily make the appropriate translation into their own terminology.

have practice in analysing many different situations containing common elements of health behaviour. If the application of such generalisations is to become part of their habit of life, they must be given many and repeated opportunities of exercising in new situations the principles they have learned. All this boils down to saying that the whole school curriculum and life must be carefully examined for opportunities for such recognition, analysis and exercise.

There are, of course, dangers which the enthusiast for correlation is liable to overlook. Children, as they mature and gain experience of the world, become ever riper for wider correlations ; but one must guard against the temptation to imagine that the eleven-year-old is capable of the width of understanding of the adult. There are the dangers, too, of being attracted by almost accidental resemblances between situations in different studies and of being deluded by the idea that mere repetition of the same fact in different school subjects constitutes correlation. And, most important, there is the danger of being impressed by mere quantity of cross-reference, so that quite trivial correlations are given equal importance with essential ones and the careful building of a few vital patterns of behaviour is sacrificed to superficial scratching among a mass of isolated fragments. Yet, provided these dangers be recognised, there is hardly a school subject which may not be used for health education purposes.*

Physical education, apart from its direct benefit to the pupils' health, gives many opportunities for explaining the working of the body and its maintenance in health, encouraging pride in personal appearance and vigour and poise, and giving an understanding of the ways to relate exercise and relaxation to individual needs. Occasions continually arise which require decisions about suitability of clothing, regulation of indoor atmospheric conditions, bodily cleanliness and care of minor injuries, the avoidance of bodily strain and the prevention of the spread of infection, the exercise of self-restraint and the practice of co-operation. It is when physical education is conceived not as the education of the body but as the education of the whole person through bodily activities that the best results will follow, for then there will be further benefits in terms of æsthetic appreciation and mental health generally.

Biology provides the obvious factual basis for health education, especially if less attention than has been customary is paid to *Amœba proteus* and more to *Homo sapiens*. The needs for healthy growth and development can be studied in an objective manner and, although such knowledge will by no means guarantee healthy behaviour, it will provide a rational basis for many health habits and may induce scepticism of the claims of quacks and charlatans.

* Appendix II makes many suggestions along these lines.

Human biology, however, is not to be limited to human anatomy and physiology. If it is to lead to a deeper understanding of human behaviour and the enrichment of human life, much attention must be paid to those respects in which we are different from the other animals, and these uniquely human characteristics cannot be simply deduced from our anatomical configuration. Consideration of our nervous system should, therefore, lead on to a discussion of our capacity for conceptual thought, with its expression in speaking, writing and reading. These means of expression, together with our communal mode of life, have produced that social accumulation of knowledge and ideas which radically conditions our instinctive responses to the environment, greatly reduces each individual's load of learning directly from the environment, and provides the materials from which civilisation is built. Similarly, the fact of the lengthy period of immaturity of humans leads on to a consideration of child care and development and of the methods of learning in general. The study of the human family unit leads on naturally to consideration of wider social units, and human ecology merges insensibly into sociology. Finally, since humans have not only evolved but are conscious of the fact that they have evolved, and therefore have the possibility of exercising some deliberate control of their own future evolution, human biology should include a consideration of the possibilities of genetic improvement of our stock.

Such biology teaching is not merely of direct individual and social value, but is also of the greatest interest to children. It can, moreover, be presented in such a way as to provide a general scientific training at least as good as that provided by the more traditional courses. Here is no plea for a "soft" biology course, but rather for a re-orientated course of whatever degree of difficulty is appropriate to the children concerned.

The physical sciences also have their contribution to make. In physics, the study of optics leads straight to the care of the eyes and of spectacles, to illumination in its effect on vision, and to the health significance of ultra-violet and infra-red radiations. The study of heat has obvious links with sweating, ventilation, clothing and domestic heating. The study of sound leads to the care of the ear and the effect of noise on mental health. Mechanics provides the basis for an understanding of posture and movement, while electricity has applications to nervous control and various medical treatments. Similarly, in chemistry, there are many health lessons. Reference can be made to foodstuffs, detergents, poisons and anti-dotes ; a study of the air is incomplete without some account of its bacterial and dust content ; a study of water can deal with its purity and the health significance of its mineral content.

Even mathematics, that subject so often abstractly presented, can be brought into service. Most of those principles of calculation which require for their assimilation repeated numerical practice can be illustrated by problems bearing on health. The drawing of graphs can be based on health tables; while it would be most valuable to give pupils some understanding of and facility in the interpretation of simple vital statistics.*

The social studies of history and geography provide the most obvious contexts for material relating to family and communal health. Right from the earliest times to the twentieth century, peoples' attitudes to and knowledge of health have changed, as have their environmental conditions and their health practices. Disease has influenced national strength and military campaigns. Industrial development has brought new health problems and scientific discovery new health possibilities. All this is the very stuff of history and its entry into history lessons in no way an intrusion. In much the same way, with different areas instead of different periods, geography can enrich health education and be itself in turn enriched. Finally, local history and local geography, merging into a general environmental study, can do a lot to give an understanding of community health services and individual health obligations to the community.

In many respects religious instruction provides a combination of historical and geographical material and can thus be utilised as suggested above. In addition, however, it provides a natural setting for consideration of individual and social ethics, in which there is much of relevance to various aspects of health education, and perhaps especially sex education.

Drama, handwork and design, apart from their general value in the encouragement of æsthetic appreciation and the development of motor skills, can be more concretely utilised in health education. Considerations of illumination and ventilation, posture and movement, dust-avoidance and cleanliness, all crop up on many occasions. With ingenuity, posters and models may be also used to illustrate many health principles.

English literature, similarly most valuable as a means of educating the emotions, also provides many literary situations with significance for personal or social health, and a discussion of them with the class is as necessary from the point of view of literary appreciation as it is valuable from the point of view of health understanding. Even the more routine exercises of spelling and grammar, moreover, may be used to provide linguistic material necessary for an intelligent understanding of health writings and conversations.

Finally, for boys equally with girls, homecraft lessons are

* Appendix IX gives some useful statistics.

invaluable. A general understanding of what makes for successful family life, of how to plan a family budget (especially with reference to forms of wasteful spending, such as over-insurance, hire purchase, excessive tobacco and alcohol consumption, borrowing and gambling), of household design and routine, of how to avoid home accidents, is an essential part of a liberal education. The simple skills of cookery, needlework and housecraft (which can be presented to boys as the skills of the sailor, lumberjack and explorer) can be linked with a deeper appreciation of nutrition and clothing and home environment as factors in health. It may, incidentally, be regretted that many education authorities prevent children from eating the dishes they have cooked if they are unable to pay for the materials used, and thereby, for the sake of a few pence, prevent the satisfactory conclusion of the educational process. While, moreover, care should be taken not to load children prematurely with adult responsibilities, a consideration of child development and care, dealing not so much with the techniques of bathing babies and preparing layettes but rather with fundamental principles of parentcraft, always arouses delighted response from adolescent children.

The full working out of the possibilities of the various curriculum subjects as vehicles for health education and the careful testing of these possibilities in actual teaching will be a long and difficult task requiring the co-operation of specialists in each separate subject and in each separate age-range, but that the possibilities are great there can be no doubt.

Despite the increased importance of class teaching after transition from primary to secondary school, the school environment and routine do not diminish in importance. Everything that can be said about the value of cleanly personal habits, care of premises and equipment, proper use of cloakroom and lavatory, co-operation in school social activities, and provision of a suitable material school environment in the primary school applies here also; with, of course, the difference that a higher standard of behaviour can reasonably be expected of the older pupils. Particularly during adolescence, there are possibilities for the development of an æsthetic ideal of personal cleanliness and a social ideal of consideration for the health of the community; while the growing interest in sex provides many opportunities for encouraging an appreciation of its problems and its potentialities. Essentially, however, there is nothing unique about the health education of a particular administrative category of pupils; and the teacher who has clear objectives, critical judgment, mature personality and proper training will be able to adapt to each age-group of pupils the universal principles of education.

Theory and Practice

The acid test of a school health programme is whether the pupils daily apply the lessons they have learned. This is a principle to which lip service is consistently paid, but rarely is it consistently practised. The responsibility for this failure, however, cannot be laid entirely at the class teachers' door. The local education authority provides the material school environment and the local housing authority or builder the material home environment; parents influence the child's behaviour most deeply; head teachers and school governors or managers lay down rules and regulations influencing health behaviour and often limiting the class teachers' efforts; government departments and local authorities impose various restrictions on what the teacher may do; while the whole social apparatus of Press, radio, film and public opinion may render nugatory the teacher's efforts. To take an obvious example, most teachers recognise the desirability of visits to clinics, sewage farms, water works and the like, but unfortunately they are often bound by regulations and customs which make a major formality of what should be an informal part of school work. When the Ministry of Education and the Local Education Authorities remove restrictive red tape * and repose in teachers the confidence to which their high calling entitles them; when homes support what the schools try to do; when houses and schools alike are so built as to reinforce and not negate health teaching; when society as a whole is healthier; then only will it be fair to blame teachers for failing to equate their pupils' practice with their theory.

Despite all these obstacles, however, teachers can do a great deal. By securing parental co-operation, individual towels for the children may be procured; by persistent agitation, education officers may be shamed into providing adequate supplies of soap and hot water and, in times of normal supply, paper towels and drinking cups. By diplomatic discussion, committees may be persuaded to provide sanitary towel machines for girls' schools.

Similarly, despite annoying restrictions, it is possible so to organise visits that pupils will derive great benefit from them. The whole programme must be planned well in advance and explained fully to the class, the actual conduct of the visit must ensure that the pupils are seeing and understanding, rather than merely having a pleasant but pointless outing, and the visit must be followed by comprehensive discussion and further study. The teacher who is imaginative, vigorous and unafraid of officialdom can work wonders in any school.

Even the worst school buildings, moreover, can be used to point lessons. Certainly a formal lesson on the importance of washing

* Since the above was written, there has been an improvement in this respect.

hands before meals, given in a school with totally inadequate washing facilities, will succeed only in convincing the pupils of the unreality of their lesson. If, however, the teacher makes a special point of actually emphasising such deficiencies of school equipment and discussing with the pupils how they may best be overcome, the educational outcome will be otherwise. At the best, the children will, when they leave school, be determined that things must be improved ; at the worst, they will at least not regard the teacher as blind to reality. This possibility of health education by virtue of the school's vices seems to be rarely recognised by teachers, perhaps because of a misguided reluctance to draw attention to the failings of their employers. Care must, however, be taken to avoid any tendency to merely carping criticism. Most local education authorities are doing their utmost to improve school buildings, and in common fairness teachers should recognise this.

Apart from this constructive study of the schools' deficiencies, much can also be done to encourage the pupils to make the most of whatever facilities are provided, for it is clearly futile to give lessons on healthy living unless the lessons are applied as far as possible in the children's own classroom. The general cleaning is admittedly the job of the caretaker and domestic staff, but the pupils themselves should co-operate in many measures. They should learn to keep bookshelves and cupboards clean and dust-free, to keep chalk dust down to the minimum and to clean board dusters regularly, to dispose hygienically of waste paper and other refuse, to check temperature and ventilation, to arrange desks and tables so as to take best advantage of available illumination, to reduce the chances of infection to a minimum, and so on. In the daily practice of these procedures health teaching becomes real and living.

Health education can begin with anything—opening a window, dusting a cupboard, covering a milk jug, taking a duster out of doors to shake it. There is no school so defective that in it health education is impossible.

Other opportunities for linking theory and practice arise from the daily school routine. Arrangements for preventing the spread of communicable diseases among pupils, for coping with minor accidents, for changing clothes and washing hands and brushing hair, all can reinforce what is taught in the classroom, as can well-conducted milk distribution and school meals. School lunches, incidentally, might be of greater educational value were they to give choice of dishes, possibly on the cafeteria system. The provision of an ideal dietary by the school caterer may provide material for a useful object lesson on nutrition and may, more importantly, habituate children to the tastes of desirable foods. It cannot, however, provide for the exercise of discrimination in the selection

of foods and, without such exercise, there can be no sort of guarantee and not even very much likelihood that the pupils will, when they leave school and can no longer divest themselves of the responsibility for the choice of their dietary, continue to eat the foods they should eat. Where the self-choice system is adopted, however, it is important to see that all quietness and leisure is not lost at meal times.

Much can also be done to make health teaching real by making it relevant to the observed practices of the pupils in matters of personal and social hygiene and, in particular, by encouraging a proper pride in appearance and a social conscience about the spread of communicable disease. Yet, astonishingly enough, there are still some schools which discourage or even prohibit girls from using face-mirrors and boys from wearing open-necked shirts, while others encourage social irresponsibility by the award of individual or class attendance prizes. It is surprising that, in such circumstances, the pupils tend to regard the care of the person as vanity, the adaptation of clothing to weather as affectation, and the isolation of infection as mollycoddling ?

Biological experiment provides an obvious means of linking theory and practice, especially in connection with bacterial infection and growth. The culture of bacteria from a sneeze or a dirty fingernail, with the production of quite conspicuous colonies on a petri dish, makes very real to children the importance of using a handkerchief and washing hands. Similarly, if two sets of young rats are kept in school, one being given an ordinary diet and the other extra milk, differences in weight and general development between the two sets may become obvious within a few weeks ; and such a demonstration of the food value of milk is certainly most convincing. Teachers, however, should make themselves familiar with the very stringent laws and regulations relating to animal experimentation before embarking on such demonstrations, lest they find themselves branded criminal for what they had imagined to be a very innocent act. Apart from any question of legality, moreover, the utmost care must be taken not to do anything which inflicts cruelty, or might even be misinterpreted by the pupils as inflicting cruelty, on any living creature. Nutritional knowledge must not be purchased with the coin of callousness.

It is also worth while to encourage older children to keep animals at home, since the gap between what one does to keep an animal healthy and what one does to keep oneself healthy is rather less if the animal is a pet in the home environment than if it is mere experimental material at school. It is, however, by no means unheard of for a woman to clean out her canary's cage most scrupulously and yet neglect her children's bedroom, or for a man to feed milk to his

greyhound and water to his children. Too much, therefore, must not be expected of automatic transfer of understanding and practice from animal health to human health. Keeping animals in healthy conditions may be most valuable as an exercise in the application of health principles, but it must not be regarded as a substitute for the application of those same principles directly to humans.

The ingenious teacher will devise many other ways of arousing and maintaining interest in health. School health bulletins, wall newspapers, posters, scrap books, charades and plays and so on can all be so utilised and, properly organised, may be very valuable. One cannot, however, avoid a certain feeling of sympathy with the child who declared that he had never liked milk since he was a milk bottle in a pageant ; and it is necessary to exercise such discrimination that these and similar exercises in health education do not become emotional barriers to it. A healthy scepticism may be encouraged by class discussion of " old wives' tales " relating to health, of newspaper advertisements and of health articles in the popular Press ; for only by discussion can the preposterous claims so often made for proprietary pills, powders and potions be exploded.

Contact with society at large may be established not only by the type of visit mentioned above, but also by the introduction of doctors, nurses and other health workers as occasional visitors to the classroom, and by discussion of local health services and health committee reports. All this, however, will fail if it is conceived as something which can be just " added " to formal lessons in order to make them less abstract. Practice must not be merely laid on as a veneer to theory : theory and practice must be welded into an indissoluble whole.*

Most important of all it is that the health teaching in the school should be relevant to conditions in the home. This is not to say that children should not be given higher standards than those of some parents, for that is the whole purpose of health education, but the purpose will be defeated if school standards are so high as to appear to the child to be unreal and Utopian. In many home circumstances, cleanliness is not only next to godliness, but also next to impossible. It is essential to avoid what might be called " behaviour fragmentation," by which is meant the development of different levels of behaviour in different environments. Everyone knows the child who has a high standard between 9 a.m. and 4 p.m. for five days of the week during four-fifths of the year " to please teacher " but, out of school hours and after leaving school, drops immediately to a lower standard. An artificial divorce of this nature between what is done in school and what is done outside is

* Appendix III makes some suggestions for linking theory and practice.

fatal. Far more valuable is a somewhat less rigid code which becomes part of the child's general pattern of behaviour and is retained throughout life.

Periods for Health Education

Since there are so many possibilities for linking theory and practice, even within the limitations imposed by bad school buildings and what often seems to the teacher to be official obstruction, it is important to enquire why they are so rarely realised. Probably one important reason is that few schools allocate time-table periods for health education and even fewer give one member of the staff over-all responsibility for securing the co-operation of all teachers in a broadly conceived and carefully planned school health programme. What is supposed to be done in all periods tends to be done in none, and what is everybody's business tends to become nobody's. In this connection, the first paragraph of the Ministry of Education's publication *Health Education* is repeatedly quoted, usually without reference to the later recommendation of the same publication that time should be set aside for "health study." The statement that "Health Education must have accorded to it by teachers and pupils alike a position which is very different from that assigned to any of the traditional subjects of the school curriculum" is often produced as an argument for the absence of any time-table provision for health education. This is, of course, a complete *non sequitur*, as might be indicated by the fact that the following statement that "It has been said that every teacher is a teacher of English, and perhaps something similar is true of Health Education" is not normally used as an argument for making no special time-table provision for English.

One does not argue that, because spelling should be taught incidentally in all lessons and attention given by all teachers to the posture of their pupils, English and Physical Education should disappear from the planned curriculum. Yet the excellent principle of the diffusion of health education through the whole school curriculum and life has too often been an excuse for its dilution to impotence. Children cannot be given bits and pieces of knowledge from time to time and then safely left to piece them together for themselves. There is no guarantee whatsoever that a child who has learned that bacteria may cause disease and that bacteria may become attached to dust particles will link up these two facts and draw the conclusion that the keeping down of dust is an important element in hygiene. It is, moreover, not even true that it is necessarily easier for the child to pick up facts one at a time than to reach understanding of a whole situation. No one recognises a friend by learning the appearance of his head, his arms, his legs and

his trunk and then integrating these pieces of knowledge; he learns the complete "friend" complex in one piece. The relevance of this for health education is clear. Whatever may be done in isolated lessons dispersed through the whole school curriculum to impart knowledge and understanding of matters relating to health, there still remains the necessity for devoting time to the examination of those complete actuality-situations in which our health behaviour operates.

It is only when definite periods are allocated for health education that most teachers find it possible or, indeed, have the incentive, to gather together the odds and ends of material which have been presented in the ordinary curriculum subjects, build them into a theoretical whole, and then proceed with activities which can weld theory and practice into a unity. It is only a staff member with special responsibility for health education who is likely to take the initiative in planning the content of the health education of children of each age-group, in seeing to what extent this can be met through the ordinary curriculum subjects and how it can be completed in special health lessons, in arranging pupil visits outside the school and inviting outside speakers into the school, in checking carefully the pupil's health practices, in drawing attention to deficiencies in school equipment, and so on. Not until the importance of health education is made the reason for giving special attention to it, rather than the excuse for leaving it unplanned, is a school likely to have a really effective health programme.

The Handicapped Child

In planning their school health programmes, teachers will naturally think in the main of the normal child. Nevertheless, even when those children who attend special schools are excluded from consideration, there remain in the normal schools a large number of pupils sufficiently handicapped to need particular care and attention. In devising their special educational treatment, the views of physician, psychologist, psychiatrist, social worker and head teacher will all be considered by the responsible education authority, but without the understanding and sympathy of the ordinary classroom teacher all efforts will be vain.

The generally accepted British classification of children needing special educational treatment is probably as good as any, and may conveniently be recapitulated here. There are the blind pupils who have no sight or so little that their education must be by methods not involving vision, the deaf who have no hearing or so little that their education must be by methods used for those who have never heard and so never learned to speak, the epileptic whose education in an ordinary school would be to the detriment of themselves or

their fellows, and the physically handicapped who by reason of disease or crippling cannot properly be educated in a normal school : all these should be educated under specialists in special schools and will not normally come under the care of the ordinary teacher. On the other hand, the partially sighted, the partially deaf, those with speech defects, the delicate, the diabetic, the educationally sub-normal, and the maladjusted may in many cases be educated in the normal school at least for a time, and it is therefore important that the ordinary teacher should have some understanding of their needs and their potentialities, and of the signs which should lead them to refer pupils to the school medical authorities for examination.

The partially blind range from those whose handicap is so severe that they should attend special schools to those who may be educated in their own classes in their own schools. In these latter cases, the teacher should obtain from the school medical authorities a clear indication of the nature of the defect and of the concomitant special educational treatment needed, whether involving changes in the curriculum, special lighting, special position for good view of blackboard, special large-scale writing surfaces and implements, special desks, special reading lenses, or any other deviation from normal school routine. Similarly, those partially deaf who may be educated in their own usual classes, may require hearing aids, individual or group training in lip reading, special position in the classroom, or other special treatment which should be clearly indicated to the teacher by the appropriate authority.

Children with speech defects may be so for several reasons. About the obscure condition of aphasia little is known and sufferers from it need a special school, but those suffering from stammer or other defects of articulation or voice can usually attend their own schools whilst receiving attention from speech therapists and, if necessary, surgeons (for certain defects of articulation) and a child guidance team (where the defect is connected with emotional trouble). Although the non-specialist can do comparatively little in the way of specific treatment, and should attempt nothing except under expert guidance, the ordinary teacher can do much of a " background " nature by the exercise of inconspicuous sympathy and understanding.

Delicate children (who may be suffering temporarily from poor nutrition, anæmia, rheumatic troubles, debility following illness, chronic non-tubercular pulmonary conditions, etc.) will usually be educated in open-air schools, with their recuperative provisions for fresh air and sunshine, adequate rest, well planned diet and specially high standard of hygiene. The group, however, is only vaguely defined, and (especially with the better modern schools whose design and regimen incorporates many of the lessons learned

in the open-air schools) the medical authorities may decide in some cases that the child may stay in his normal class under special conditions. Similarly, although often diabetic children will be under treatment in hospital, some will live at home or in hostels and attend the normal neighbourhood school. In both cases, the teacher should not only follow faithfully the prescribed regimen for the children, but should also make every effort to explain to them the reasons for the required measures and to secure their willing co-operation in effecting them.

The educationally subnormal child may be so for a variety of reasons. Apart from low innate intelligence, educational backwardness may be caused by psychological maladjustment, irregular school attendance, frequent change of school, friction between school and home, inadequate food or rest, or unsatisfactory school conditions such as large classes or poor teaching. Those with an intelligence quotient of less than about 50–55 are scarcely educable in the ordinary school sense and will be dealt with as mentally deficient. Those children with an intelligence quotient from about 50–55 to 70–75 are normally best taught in special schools, but those of greater intelligence generally do better in special groups or classes in the ordinary school. Since commonly about one child out of twelve falls into this category, the problem is of greater magnitude than is often realised, and much careful experiment will be needed to discover the best methods of teaching these children, so as to provide for their special needs without making them feel persons apart from their fellows.

Maladjusted children, who show signs of psychological disturbance or emotional instability, may also be educationally subnormal, but it is convenient to consider them as a separate category. Sometimes, as a result of investigation by a child guidance team, the maladjusted child may be removed to a special school where appropriate remedial teaching and social life is provided. Often, however, the child continues at the ordinary school whilst receiving supplementary attention at a psychological clinic, and in such cases it is vital that the child guidance team and the child's own teacher should work in the closest harmony.

This co-operation, of course, is only a special case of the co-operation necessary at all stages in and in all aspects of the educational process. Not only in the interests of the handicapped child, but in that of the normal child too, there must be continual fellowship and mutual help between teacher, psychologist, doctor, nurse, administrator and parent. Only so may the school health programme bear healthy fruit.

CHAPTER VII

COLLEGE

> We are of the ruminating Kind, and 'tis not enough to cram our selves with a great Load of Collections; unless we chew them over again, they will not give us Strength and Nourishment.
> Locke. *Of the Conduct of the Understanding*, XIX.

Success in any field of education depends upon the general personality and special training of its practitioners and where, as in the case of health education, the field is being newly cultivated, it is specially necessary to concentrate attention upon this problem of educating the educators. About the general personality of those who are already adult comparatively little can be done, for the culture of character requires a whole lifetime, and for any marked improvement in this respect we must await the maturing of a new generation. Special training, however, takes less time and, while it will not transform those whose personalities render them unsuitable as educators, it can markedly improve the efficiency of those who are not so disqualified from the task. Such special training, generally speaking, will take place in colleges of one sort or another.

Since education for health is merely one current in the whole stream of education, it requires the co-operation of all who in any way influence the maturing individual. The parent provides the home routine upon which primary assumptions are based, gives training (good or bad) in basic habits of health behaviour, imparts the first smatterings of factual knowledge about health, influences (consciously or unconsciously) the emotional attitudes of the growing child and, mainly by example, helps in the formation of the child's ideals. The teacher is perhaps specially responsible for the systematising of knowledge but, being very genuinely *in loco parentis*, cannot avoid helping or hindering the development of the other aspects of health education. The administrator, national or local, is largely responsible for providing the public health services and the general material environment in which children grow up and therefore, since environment is so subtly educative, plays willy-nilly a large part in health education. The youth leader and clergyman and industrial welfare worker can do much to help in the consolidation of desirable health habits, the provision of opportunities for healthy exercise of body and mind, the encouragement of mature ideals, and the enrichment of social understanding. The school doctor and dentist and nurse, providing, as they usually do, the

first contact* of most children with the organised health service, play an important part in forming the child's general attitude to health care and might also, if they had some training in educational method, help occasionally in classroom teaching. The health visitor and family case worker, through their contacts with parents, can exert considerable influence on the whole of home routine and hence on the health education of the children. The specialists in psychology, marriage guidance, pediatrics and so on, do much, by lecturing and writing and consulting, to set the whole tone of what will be the popular health education of a few years ahead. The workers in journalism and radio and film provide much of the general mental climate within which all educators must work. It is therefore essential that between all these natural educators, each quite unavoidably playing a part in health education, there should be the closest possible sympathy and collaboration and that each should receive adequate training for his responsibilities.

Parents

Parents differ from most of the other groups in that they undergo no compulsory professional training and, therefore, only those who are trained voluntarily will be trained at all. All experience shows that, at any rate at present, the proportion of parents who can or will spare the time and effort required is very small, but the yeast is not to be overlooked because it is a minor component of the loaf. Parents in each neighbourhood unceasingly discuss their children with each other and a single knowledgeable and sympathetic mother can raise the level of child rearing in a whole street. It follows, therefore, that in addition to what is done in the way of general health education of the adult citizens of the community, local authorities and health education agencies should make a special effort to encourage parents to improve their understanding of child development and care.

Those parents who can be gathered together in definite study groups, either through a parent-teacher association or by a clinic or by other means, are normally not a random selection, but a selection markedly above the average both in intelligence and in enthusiasm. It is, therefore, a pity to insult their intelligence and dissipate their enthusiasm by presenting them with the mushy pabulum of "popular talks," when they are ready for the strong meat of scientific study. A coherent presentation of the general concept of the maturation of the child, of his physical and mental needs and how they can be met in family life, of the special problems of each stage in the individual's development, of the ways in which the home regimen can diminish the spread of communicable disease and can

* Written before the National Health Service was established.

hasten the recovery of the infected member, of how the behaviour of the parent influences that of the child—all this is usually within the understanding of the sort of parent who will voluntarily attend a course of study. What difficulty there is, is usually inherent not so much in the subject matter as in its presentation ; which is why the still common practice of having such courses conducted by medical practitioners is so often a failure. Only those skilled in the art of education can successfully present this material to parents, and few doctors have such skill. Yet, since parents pre-eminently are the natural health educators of children, it is worth devoting all the skill and effort of which we are capable to their further education.

Local education authorities and voluntary organisations, in increasing number, have opened adult education colleges at which week-end and other short courses are arranged. Most often, however, the membership of such courses consists of the professional and upper middle classes, if for no other reasons than those of social class tradition. It is the " done thing " for a teacher or a social worker to attend referesher courses ; for the dustman or housewife to do so is something of a revolution. A local authority which took seriously the common statements about the overwhelmingly important social rôle of the family would not be content to accept passively such a situation.

By the recommendation of health visitors, teachers, trade union officers, employers and others, it would compile a list of parents who appeared, whatever their social class, to be rather above their neighbours in intelligence, standard of home care, child rearing or community esteem. These parents—the natural leaders of the neighbourhood unit in matters of health behaviour—would be given every help and encouragement to attend short courses at adult colleges. It would need a delicate approach, financial grants, provision of home help or crêche facilities to release both father and mother for the desired period, perhaps persuasion of employers to the granting of compensatory holidays. But, if all this were done and it became a matter of personal pride and public esteem to be invited to attend such a course, how the standard of parental care would rise !

Educational Workers

Although parents occupy prime place among educators, those whose profession is education come a very close second. This profession, unfortunately, is fragmented into school teachers, university and college lecturers, youth leaders, inspectors, administrators and so on, without the underlying unity of qualification and training which binds together the equally diverse branches of the profession of medicine. It is, therefore, the more necessary to

stress that, whether an individual is to end up as a Class Teacher, Sixth Form Specialist, Youth Leader, Professor of Education, Education Officer, or one of His Majesty's Inspectors of Education, a certain common core of training is desirable. So long as some graduates continue to go into schools without any professional training, some educational administrators to be appointed without first serving a period in the classroom and some training college and university lecturers to rely solely on high academic and research qualifications, it will be impossible to achieve a sympathetic unity throughout the profession. In the meanwhile, however, a great deal could be done within the colleges and departments of education through which pass the great majority of educationists in training. For simplicity, the word " teacher " will generally be used in this chapter, but in most contexts it will have the wide meaning of " one who practises professionally in the art and science of education."

The first point is the selection of candidates for entrance to the colleges. Apart from considerations of academic attainment, it is important that all prospective teachers should be people who are likely to inspire their future pupils with positive health ideals. This does not mean that they must all be perfect physical specimens. In the first place, this is impossible and, in the second, it is doubtfully desirable. Children need examples not beyond their imitation, and a teacher of only average physique who nevertheless displays vigour, poise, vivacity and neatness may evoke more effective emulation than an Adonis or an Amazon. In some cases, indeed, a cripple who cheerfully makes the best of his disability may be a better health educator than an athlete vain in his virility. What is important is not so much that prospective teachers should have hereditary constitutions far above the average, as that they should observably be making the best of what they were born with.

Once selected for admission, each student should become well known as an individual to the college staff, so that his weaknesses may be corrected and his powers utilised to the utmost. This might appear so obvious as to be unworthy of writing but, since the obvious is often accepted in principle and neglected in practice, it must be stressed. The lecturer who knows personally only a handful of his year's entry is not doing his job properly, which is to say that a large proportion of lecturers are failing in their jobs. This, however, is not intended as a criticism of the lecturers, who in most cases recognise the inadequacy of their knowledge : it is simply an argument for a staffing ratio which would allow the tutorial time necessary for the development of this intimate understanding. Given such time, the health education lecturer would be in a position to give guidance to students not only in their studies but also in their personal problems as they pass into adult life.

The general college environment influences greatly the students who live in it and should be carefully examined with a view to improvement. Changes involving major structural alterations are matters of long-term planning and usually without the responsibility of the college staff, but in most buildings minor improvements could fairly easily be made. Ventilation and illumination, decoration and general cleanliness, the provision of adequate soap and towels and so on, are all matters in which the health education lecturer could take the initiative. Even better, the students could be encouraged themselves to point out deficiencies and make suggestions for correcting them, thus putting into immediate practice what they are being taught in principle. In the same way, student suggestions about the routine of college life should be not merely invited but, where valid, acted upon. Minor yet important matters such as the allowance of sufficient time after lectures to wash hands before meals, the shaking of study carpets in corridors, and the timing of lectures after meals to allow opportunity for defæcation, may pass unnoticed by the tutorial staff and yet be very obvious to students. If, during their college years, students are encouraged to take the initiative in effecting health improvements, their lectures and studies will become a means of enriching the way of life of the community in which they live and work, instead of being merely a necessary labour in the achievement of professional qualification.

Such integration of college health teaching and college health living implies a status for the health education lecturer very different from that he normally holds. In the great majority of training institutions health education is a minor secondary responsibility of a busy biologist, physical education specialist or physician and, as such, claims only marginal time and thought. All too often, indeed, the study is regarded by students as a " Cinderella " subject, which it is unfortunately necessary to read but to which no particular attention need be paid. What is necessary is that health education should be the prime concern of a member of the tutorial staff and thus claim most of his effort and warrant much careful planning. In this way only will it be possible to arrange the small discussion groups, individual consultations and student activities which are necessary to make health education a vital part of the college life.

The responsible staff member may be, by training, one of many different specialists. The biologist has the advantage of a physiological rather than a pathological outlook ; the physical educationist most easily makes the link between learning about healthy habits and practising them ; the physician has invaluable first-hand experience of people in health and in sickness. But, from whatever field of work the health educationist may be recruited, there will inevitably be large gaps in his understanding to be filled by private

thought and study. In particular, there is needed much critical examination of the traditional content of health teaching, with a view to the elimination of matter more appropriate to medical students, student nurses and prospective sanitary inspectors and to the incorporation of a fuller study of the growth characteristics of the maturing individual, the effective motivations of health behaviour and the media and techniques of health education. Some of this material should form part of the basic training of every teacher, but there is also need for more detailed study by those students who wish to equip themselves to act as health education specialists in the schools.

All students need an introductory survey of the general aims and manifold aspects of health education, so that they may start their study with the enrichment of a wide vision and may be disabused of the common conception that health education consists mainly of a watered down medical course and a few details about handkerchief drill and school drains. All need an understanding of the varying hereditary endowments of children and of their characteristic yet individual stages of growth from conception to maturity. Similarly, the basic health needs of the individual, the family and the community ; the rôle which can be played by the school in the promotion of health ; the signs which may indicate that a child should be referred for medical examination and for which the teacher should be ever open-eyed ; the ways in which the school health programme may be planned ; the occupational health problems of the teaching profession—all are essential to the future teacher. Finally (and this seems so obvious that only its common neglect warrants its mention here), teachers in training should study the ways in which the school routine and the school curriculum subjects can best be utilised as media of health education and the methods by which the progress being made by pupils may best be evaluated.

Students, however, are not merely future teachers, but also future citizens and, one hopes, future community leaders. They should, therefore, learn something of the general health problems of society, the organisation of its health services, the family life of the homes from which their future pupils will be drawn, and the ways in which the parent and citizen can help in raising the level of health consciousness of their children and fellow-citizens. The inevitable retort that the training course allows no time for all this is an argument not against the fullness of the proposed study, but against the miserably inadequate length of the present course.

Finally, whatever their future lives may bring, all students need health education not only as potential pedagogues and parents, but also as present personalities. Those tutors who have taken the trouble to make enquiry have been astonished at the profusion of

the undergrowth of health myth and superstition in their students' minds and, if student life is to be rich and effective, this rank growth must be excised. Prospective teachers, moreover, are not immune from the common sex problems of late adolescence and early adult life—indeed, their usual unfortunate segregation in unisexual residential communities commonly exaggerates these problems—and the college health education programme should make provision, by both lecture and discussion, for help in smoothing the way through this period of compulsory celibacy.

The course so far considered is a minimum one which should be taken by all intending teachers, and it might well be incorporated, along with Physical Education, as an integral part of the general education course. Those students who wish to make a special study of health education will, however, need to dig more deeply. As a matter of practical organisation, such students should be able to offer Health Education as a major field of study in the Teacher's Certificate examination, for only so is it likely that they will be able to devote sufficient time and attention to it. These selected students might reasonably be expected to equip themselves with a wider and more detailed knowledge of human physiology, to achieve a fuller understanding of child development and of the physical and mental needs and potentialities of the maturing child, and to make a more thorough examination of the relationship between habits of behaviour and the health of the individual and the community. If they are to act as initiators and co-ordinators of school health programmes, they will also need to make a fuller study of the ways in which the school's daily environment, curriculum and routine can be utilised as health education media and of the means by which co-operation can be achieved between teachers, parents and others concerned with the child's education in health. Each such student, moreover, might well select one particular pupil grouping (such as Nursery and Infant School, Junior School, Secondary School, School Leavers, Sixth Form, Youth Organisation or County College) for especially thorough semi-independent study as the subject of a " thesis " or " special exercise." A draft syllabus for a qualification in health education is given in Appendix VII.

Any effort by the health education tutor to take his duties seriously may seem to involve the risk of friction with other members of the tutorial and domestic staff. Lectures on nutrition evoke the inevitable and often justified student criticism of college meals ; those on cleanliness bring forth complaints about the inadequacy of the college provision of cleaning and washing facilities ; those on posture and lighting provide ammunition for an assault on the existing lecture rooms and studies. Too often the health educationist, reluctant to do battle with the bursar or cook and wishing

to bolster up the authority of the principal and the prestige of the college, tends to treat such criticisms as frivolous and to regard himself as counsel for the defence of the college and all its failings. Yet it is surely a good thing that students should apply to their immediate environment the theoretical knowledge they are acquiring, and student criticism is a thing devoutly to be wished for and assiduously to be fostered.

Criticism, however, must not be allowed to degenerate into mere captiousness and each point raised by the students should be fully discussed with them in an endeavour to reach agreement on what steps might practicably be taken. If students feel that their suggestions for correcting deficiencies are sympathetically considered, they are normally willing to recognise that those requiring major expenditure of money or material must in many cases be tolerated for the time being. What is important is that they should not gather the impression that their health education lecturer merely talks about health but does nothing towards the improvement of the health of the college.

It is a very useful exercise for each student each year to draw up a list of all the college health deficiencies he can think of, for the tutor to collate these criticisms into a comprehensive list and for tutor and students together to discuss the items *seriatim*. At one college where this was done, in some cases it was possible to enlist the students in active co-operation to correct deficiencies, while in other cases the college authorities took the necessary steps. But, even where difficulties of finance or supply made it impossible to put things right immediately, a full and honest discussion with the students made it clear to them that there was a real desire to harmonise lecture precept and college practice and that constructive criticism by the students was genuinely welcomed.

The likelihood of such stimulation of student criticism leading to friction between the health education tutor and his tutorial and domestic staff colleagues may be minimised by the exercise of tact and discretion. If it is made clear that the object of such stimulation is education rather than rebellion and that the case of the college authorities will be presented fairly to the students, no principal worthy of his post will raise objection. If the caterer is invited to talk to the students on the problems of communal catering, she will have the opportunity of dealing with questions and criticisms quite openly, which is certainly preferable, from her point of view, to receiving the backwash of swirling currents of querulous complaint. If the head porter, instead of being merely instructed to replace electric lamps with more powerful ones or to see that certain windows are opened and certain doors closed, is taken into genuine consultation as befits one of such importance in

the college's daily life, his keen co-operation can be enlisted. By such obvious, yet often neglected, steps it is possible to bring about quite considerable changes in the student's material environment without arousing resentment or opposition.

It is the practice in some American colleges to institute a "Health Programme Committee," consisting of the health education lecturer, the physician and nurse, the bursar and porter, representatives of the general tutorial and domestic staffs, and representatives of the students. Such a committee would almost certainly be of great value as a means of pooling the widely differing experiences and views of its members, but British academic institutions seem to have a profound suspicion of committees, however worthy their objects, and there are probably few places where this procedure would at present be successful. Nevertheless, committees are sometimes of great value, and the idea is worthy of careful consideration.

Teachers, from the nature of their academic training and professional occupation, are more prone than most people to attach undue importance to the intellectual acceptance of principles (and perhaps insufficient to their habitual exercise). It is, therefore, peculiarly important that in the training of teachers there should be constant ward against the danger of divorce between precept and practice. The traditional means of "integrating theory and practice" has been the arrangement of student visits to clinics, special schools and so on. About the general value of such visits there is little doubt, but this is not to say that their integrative function is proven. In fact, students often regard them as very pleasant little outings which, because they take place at some distance from the college, appear as "extras" to the college course rather than as an integral part of it. If, however, as suggested above, students are brought into active co-operation in the formulation of a plan for healthful college life, there is a real possibility of their linking health theory with health practice.

This linkage can, moreover, be made in other ways also. An example is the arranging of a visit to the college by a mass radiography unit. The students, seeing part of the premises temporarily transformed into a clinic, and their health education tutor co-operating with the radiography team, can hardly fail to realise that the college does not regard the delivery of lectures as fulfilling its health responsibilities. Discussing the value of mass radiography with their tutor in advance of the visit; taking their turn for examination along with the principal, the matron, the head porter and their respective staffs; reading the literature provided in connection with the visit; discussing their experiences after the departure of the unit; viewing films and exhibition material on lung health; gathering relevant vital statistics; visiting a

tuberculosis colony: these activities constitute an educational experience of the greatest value. Yet how often, even where students are given the opportunity of microfilm examination, is the whole matter regarded by colleges and departments of education as an unfortunate intrusion, to be got out of the way as quickly as possible!

At most colleges students are told in lectures that good teaching in general consists largely of bringing the pupils into activity and that good health education in particular consists largely of inculcating healthful ways of living—but the cynic may be forgiven a smile when he observes that they are *told all this in lectures!* So long as the students' own health education consists almost entirely of listening to lectures and reading books, with occasional unrelated visits to clinics, it is unlikely that they will make health education a living reality in the schools whose staffs they join. The college health programme must, therefore, be one of active doing rather than passive listening. In the implementing of such a programme, it is an enormous help to have a room set aside as a health education workroom. In such a room should be cabinets containing anatomical and other models, a corner carrying easily accessible health charts, a collection of posters issued by health agencies and commercial firms, a small library of reference books, files of health pamphlets and reprints, a large expanse of wall boarding and various pieces of visual aid apparatus. The students can then be encouraged to examine models and charts at their leisure, to discuss the merits and demerits of posters and pamphlets, to carry out investigations of particular problems in health education, to conduct a live and vigorous wall newspaper on current health topics, to display the work of pupils in the schools they visit, to examine in small groups health filmstrips and the like—in short, to gain experience in the type of activity which they are recommended to carry out when they enter the teaching service. None of this depends essentially upon the provision of new buildings: the enthusiastic and ingenious health education tutor can make such a workshop from any normal lecture room and can draw forth such activities from any normal group of students.

To summarise: in the training of prospective teachers the traditional lecture course in what is still often called "hygiene" is totally inadequate. There is needed a health programme which begins with the careful selection of candidates for entry to the college, provides a healthful material environment and daily regimen for the students accepted, attends to their individual needs and unobtrusively gives them guidance in human relations, encourages student criticism and suggestions for the improvement of the college life, at every point integrates theory and practice, calls

for the maximum of student activity, and provides factual instruction to the student as a present personality, a potential parent and a prospective pedagogue.

Health Workers

Most of what has been said about the professional training of teachers applies with little modification to that of doctors, nurses, clergymen, social workers and so on. In each case we have young men and women pursuing their studies beyond the age at which most people have become wage earners ; and the physical, emotional and spiritual needs of young adults are much the same whether they are to take up education, medicine, religion or social service as their life work. Only those strands of the health programme which are to be woven into the pattern of professional proficiency need be very different for the different categories of student. In what follows, therefore, what precedes will be largely presumed and attention directed mainly to those respects in which candidates for a particular profession have needs different from those of the prospective teacher.

The professional training of the intending doctor, unlike that of the intending teacher, ensures that he will acquire in good measure the basic knowledge of human anatomy and physiology necessary to all health educators and, although it might well be argued that he would benefit by a drastic pruning of his course of study, this is a matter which must be decided by the profession itself. The educationist, however, may reasonably make some general suggestions, the more so since he sees the results of the present medical training in his occasional rôle of patient.

It is unfortunately true that in some cases the most striking impression one gains from experience as a patient is that of the extraordinary aloofness of the doctor, who appears to regard himself as omniscient and his patient as nescient, and seems to resent any attempt by the patient at intelligent discussion of the case as an unwarrantable intrusion by the unsanctified into the holy of holies. Such extreme remoteness is, admittedly, rare ; yet perhaps no rarer than the other extreme of a really warm welcome to and active encouragement of intelligent doctor-patient collaboration. Doubtless what is most needed is a great increase in the number of doctors, that they might have adequate time to devote to each patient, but that is not the only need. If the medical profession is to complete its evolution from that of witch doctor to that of health counsellor, its members must surely be prepared to throw off the mask and meet their fellow men undisguised. Technical jargon, legitimate enough inside the profession, serves when used to the patient only to mystify, terrify or amuse—this last because the

days have gone when a totally ignorant public regarded long words as an infallible sign of wisdom.

The medical student, therefore, should be trained to regard patients as co-operators in the job of regaining and retaining health. This implies, as the medical profession itself is realising, a reorientation of medical education away from the pathological minutiæ of the more obscure conditions and towards those problems which are in fact the ones which most often bring patients to the general practitioner. It is the coughs and colds and influenzas, the digestive troubles and rheumatisms, the minor injuries and local septic conditions and nervous troubles on which patients most often want advice. Increasingly to-day, moreover, people have come to realise that minor sexual and marital difficulties may often be cleared up by helpful advice and doctors should have a training which will fit them to give it. Only the doctor himself can decide what his advice shall be, but it is the patient who knows what his problems are.

Even more important, perhaps, are the implications of the increasing recognition that the doctor should be concerned not merely with treating diseases but also with promoting positive health, and that his training should therefore give him greater familiarity with the functioning of the healthy body and mind. For the physician whose rôle is conceived in this manner, a basic scientific knowledge and a genuinely scientific attitude towards the problems of his daily practice are of more importance than the memorisation, by obscure and sometimes obscene mnemonics, of masses of anatomical and clinical detail. Whether (as would appear to the educationist) separate botany and zoology courses should be replaced by a general biology course ; anatomy, physiology, biochemistry and psychology integrated in a human biology course ; the deadweight of dreary dissections lightened by critical selection of required material ; the study of cadavers replaced by the observation of people—all this is a matter for the medical profession itself to determine. In making its decision, however, it will no doubt bear in mind that its members will in future have increasingly, as patients, a generation which has learned some biology at school and will not be content with a clearly unbiological outlook.

It must also be clear that, in some ways, the promotion of positive health, involving as it does the changing of public attitudes and habits, is less a matter of medicine than of education, and it therefore appears desirable that medical training should include definite instruction in the principles of education. All intending doctors should learn something of the intellectual and emotional development of the maturing individual ; since otherwise their efforts at enlightenment may be above the heads or beneath the consideration or remote from the needs of their future patients. They should be

given some idea of the relative values of and appropriate occasions for casual conversation, firm advice, confession of ignorance, provoking of question, bestowal of pamphlet, recommendation of book, elucidation of chart, demonstration of model, projection of illustration, and so on ; since otherwise they may start their careers as educators with the primitive techniques which teachers have long abandoned. Those of them who are specially preparing for local authority or similar administrative posts need to study the techniques of community health education and their value in various situations. The recognition of these needs requires no medical qualifications : it requires only some knowledge of the way in which the monumental conscientiousness of the medical practitioner, in general unguided by educational understanding, so sadly fails to rebuild the behaviour pattern of the patient.

What applies to the doctor applies in varying degree to other health workers such as nurses, midwives and health visitors. And, fortunately, it is similarly true that the teaching, examining and professional bodies concerned are increasingly aware of the importance of this aspect of training. Yet to the observer who is not a member of, but is served by, the medical and allied professions it seems strange that the health visitor's qualifications are so very thorough in nursing and so slight in education. Comprehensive training in hospital nursing and midwifery is no doubt useful, but one wonders whether the time has not come for a radical change in the training of at least a proportion of health visitors. In at any rate some areas, the health visitor's duties and opportunities rarely call for the great nursing skill which comes only from long years of practice, but demand continually that understanding of how to influence people's attitudes and behaviour which is at the root of education. What is suggested, in effect, is an acceptance of the conception of the health visitor as a peripatetic domiciliary health educator, with the change of emphasis in training which this implies.

Religious and Social Workers

In addition to the workers in the fields of education and health, those whose vocations lie in religion and social service can play a vital part in health education. So far as clergymen are concerned, this is most clearly apparent in the case of marriage preparation and guidance. By no means all who are contemplating marriage would wish to consult a clergyman and by no means all clergymen would be effective counsellors ; but those who regard their marriage as being a religious sacrament as well as a civil contract are surely entitled to expect that their minister, be he priest or pastor or rabbi, shall have some special understanding of the marriage partnership and shall give wise advice to those entering into it. To those who

accept no dogma that ministries must be celibate or that they must be male, it must appear a grave hindrance that so many who might give marriage counsel are virgin and so few are female ; nevertheless, even with such hindrance, a great deal might be achieved.

It is not for those outside any particular faith to suggest what teaching should be given on the religious aspects of marriage, but there is much in matrimony common to those of all faiths and those of no faith. It seems clear, therefore, that all who may officiate at marriage ceremonies, be they clerics or registrars, should undertake some study of the state in which they unite man and woman. Any detailed instruction in the techniques of sex or of family planning is not their function, but they should at least be competent to give general advice on sex relations, wider questions of personal adjustment, economic factors in family life and so on. In their case, as in those of the teacher and the doctor, training will not make up for defects of personality ; but it should enable a personality of any given merit to do a better job than the same personality untrained. A study of the problems of marriage and family life should, therefore, be an important element in the professional preparation of all who may conduct marriage ceremonies.

But whereas the registrar rarely sees again the couples he has married, the clergyman usually does so. He can often, therefore, give continued help in the succeeding years of marriage. Apart from his purely religious office, he is in effect a social worker and has the same opportunities as other social workers. When the marriage partners are finding difficulty in mutual adjustment, when the family unit is finding difficulty in adjustment to the wider community, when parents find difficulties with their children and children with their parents, social workers of all kinds can often smooth out frictions and heal up rifts. And, when they themselves feel inadequate, they can put the individuals concerned into touch with the marriage guidance centre or child guidance service or family welfare organisation most appropriate. This, of course, they already do to the best of their ability : all that is being urged is that their training should pay more attention to such matters than has hitherto usually been the case.

Creating Cadres

The proportion of Britain's population which proceeds to post-secondary college education is still far too small, and we cannot continue as a progressive people without considerably enlarging it. Nevertheless, these comparatively few people—the teachers, youth leaders, doctors, nurses, administrators, clergy, social workers and selected parents—exert an influence upon community thought and action out of all proportion to their number. It is largely they who

can break the circle of social custom and convert it into a rising spiral, and their training is therefore a matter of major importance. For those already at work, this special training in health education must be done largely by means of "refresher" and vacation courses, and such courses, well devised, can do much. For the future, however, it is hoped that college and other professional training courses will be so modified as to create cadres of the type here envisaged. It can be done, and it could be done quite quickly.

CHAPTER VIII

COMMUNITY

> If it be not the purpose or business of every man to study in the literal sense of the word, yet it is certain that, out of every average group of people, there will be a proportion of students who must study if the society in which they live is to do its perfect work.
>
> Mansbridge. *An Adventure in Working-class Education*, Prologue.

THOSE whose special responsibility is the health education of the general adult public are faced with a very difficult task. Very few present adults have had any systematic education in health during childhood and the great majority believe an astonishing number of old wives' tales and indulge in a wide variety of unhealthy habits. Yet it is notoriously difficult to change radically the behaviour patterns of adults, since to do so involves imparting new facts to minds already largely closed, building up new habits in place of old ones well established and substituting new attitudes for old ones deeply ingrained.

Yet, despite all difficulty, much can be achieved by concentrated effort. In recent years the public has been persuaded to bring the subject of sex out of its dark corner and to discuss syphilis and gonorrhœa as they discuss other diseases. Families wedded to boiled cabbage and mash have been persuaded to eat raw vegetable salad. Men have learned to spit less frequently in public places and women to sneeze less indiscriminately in public vehicles. The combined effect of publicity by radio, film, poster, pamphlet and Press advertisement has been considerable. By selecting one or two simple facts of basic importance, one or two habits and one or two attitudes, and labouring their importance incessantly, our public health authorities have been able to influence even adult health behaviour. Little headway appears yet to have been made in overcoming what is perhaps the public's prime deficiency—its magical regard for the bottle of medicine—but even here important results might be achieved by co-ordinated effort. The main obstacle is perhaps not so much the stubbornness of the masses as the vested interest of the manufacturers.

Surveying the Ground

In facing any difficult task, the prime requirement is always an estimate of its nature. Unfortunately, however, this preliminary estimate has scarcely been attempted in the field of public health

education. What exactly are the "health" habits of our people and how do they differ in different age-groups, different social classes and different geographical regions? Which of these habits are sufficiently valuable to warrant the expenditure of time and effort on their reinforcement? Which of them are most harmful and, of these, which may be capable of modification by educational measures? Which widespread faulty notions are fairly harmless and may reasonably be left undisturbed, and which are really harmful and justify the exertion of great effort in their removal? Are there any common faulty emotional attitudes which are both important from the point of view of health and capable of re-orientation in adults? What are the incentives which may motivate members of the general public to develop ideals of good citizenship in health matters? To none of these questions is the precise answer known.

There have, it is true, been a few surveys on these lines. The official Social Survey organisation has gathered information for the Ministries of Food and Health, while private organisations such as Mass-Observation and the British Institute of Public Opinion have also carried out investigations. In the U.S.A., many more health surveys of this type have been carried out. Yet the total material available to guide health education programmes is almost fantastically inadequate. We must recognise, however, that the health education of the community cannot be suspended while a full programme of research is formulated and implemented. There are urgent needs to be met and we must, while hoping for a solid scientific basis for our work in the future, proceed at present on the basis of a subjective assessment of the situation.

Perhaps the most outstanding feature of such an assessment is its demonstration of the great gulf lying between many of the commonly advocated health practices and the actual health folkways of our people. An appreciation of the extent of this gulf is a prime requisite if popular health education is to avoid Utopianism and have some effective outcome. In certain social groupings, lousiness is widespread and all-over washing most infrequent. Some groups have no baths, no hot water supply and no indoor lavatory facilities. In some groups, special night attire is almost unknown, changes of underclothing most rare, and personal handkerchiefs an affectation. Whole strata of the population have never known an individual bedroom or even an individual bed, and their younger members never get sufficient sleep. To such people a special type of approach is necessary. Where the presence of lice is regarded with equanimity or even, in some cases, with a certain degree of pride as a sign of a body healthy enough to provide an attractive breeding ground, any expression of disgust on the part of the health educator will serve

only to arouse resistance. All that will avail is slow, slogging, persistent, and unemotional exegesis of the true facts about lousiness. Where generations have lived and died with only rare all-over washing, any talk of the hygienic necessity of a daily bath will appear in all its futility. What may carry some weight is the hedonistic consideration that warm baths are among the real pleasures of life. Where every pint of water has to be heated over a fire and the preparation of a hot bath is an hour's toil, the only effective argument is the provision of decent houses. At every point such considerations arise. All too often, popular health education material reflects most clearly the professional class behaviour patterns of those who produce it, but shows little appreciation of the common way of life of those who most need it.

It must not, however, be imagined that only the lower income groups need special attention. The wealthier groupings need guidance away from the innumerable "hygienic" rituals in which they indulge. They need weaning from their excessive preoccupation with the minutiæ of social propriety. They need, more than those whose daily work calls for bodily effort, encouragement to take adequate physical exercise. It is the wealthy rather than the poor who tend to provide their children with hired help in place of parental care, and to whom therefore education on the value of the parent-child relationship should be specially directed. It is the "respectable" lower middle-class groupings, rather than either the very rich or the very poor, who continue to look on sex as something not quite proper, and to whom therefore a programme of sex education would be particularly valuable. It is in the higher and middle-class groups, rather than the lower, that the greatest prejudice against women doctors still survives. Each social grouping has its own special practices and special prejudices, and each needs its own special type of approach.

In many respects, however, the community is more uniform. Widespread through all the income groups there are current fallacies and myths relating to food, sex and almost every aspect of personal health. Rich and poor alike need education on how to deal with coughs and colds and sneezes; for, although the debutante's minute lace square may look more graceful when held to the face, it is no more effective as a germ trap than is the fishwife's fist. At all social levels there is excessive self-medication and widespread acceptance of sub-health as normal. Throughout society there still exists a form of sex prejudice which excludes women from some beneficial activities and men from others. Matters such as these may all, therefore, be dealt with by wide-ranging media which make no discrimination between different classses of recipient.

Central Planning

The planning of a nation-wide educational campaign on some specific health education topic (such as, for example, diphtheria or venereal diseases or dental health) is a matter requiring the co-operation of many specialists. No commercial firm would contemplate the expenditure of some hundreds of thousands of pounds without ensuring that those who were to do the spending were competent to spend most effectively. To say this is not to fall in with the popular cry against Civil Servants ; it is only to insist that, if it is decided that those in charge of such work are to be Civil Servants, they should be most carefully selected on the basis of their special qualifications for the job and, if necessary, brought into the Civil Service from the fields of social research, medicine, education, entertainment and publicity. No physician, pedagogue or even principal secretary can reasonably be expected to be proficient in all the hundred and one miscellaneous skills required in a great health education campaign : what is needed is a team of workers, each expert in a particular part of the field and with some general appreciation of the whole, led by a person of really wide vision and of a personality capable of evoking the loyalty and securing the harmonious working of the team.

Such a leader would make it his first duty to call into consultation the chief members of his staff (including at least a physician, an educationist, a sociologist and a publicist) to discuss the general aims of the proposed campaign. The aim settled, after consideration has been given to any directive received from the government department or other appropriate authority concerned, the next step should be a field survey of the problem to be tackled. Without awaiting the results of long-term research, it is possible to obtain quite quickly a general guide to the state of the public mind on a specified topic by means of a quantitative opinion poll, a qualitative attitude survey and a sampling of the experiences of those whose work brings them into close touch with the masses of the people. On the basis of such a field survey, the main faulty assumptions to be shattered, unhealthy habits to be transformed, factual errors to be corrected and emotional resistances to be eroded can be estimated.

The planners now, instead of vaguely " enlightening the public on so-and-so," can see certain specific and fairly clearly defined objectives. A faulty assumption, such as " respectable people do not discuss the matter of venereal diseases in public " or " it is not important to wash one's hands after using a public convenience " cannot be corrected by mere argument, for it has no rational basis. What is needed is *action* which demonstrates clearly that the assumption is incorrect—such as in the first case, the public discussion of

venereal diseases by eminent persons of undisputable respectability and, in the second case, the removal of the usual cash payment which restricts the use of washing facilities. An unhealthy habit, such as that of sneezing in public vehicles or that of eating meals too hurriedly, has been ingrained by constant practice and can be transformed only by constantly drawing attention to it and to its preferable opposite. Thus, in this case, what is needed is a multitude of visual and aural reminders, meeting the eye and ear at every opportunity (attention being paid, of course, to the fact that habits are of different natures and thus need different approaches, and to the danger that familiarity with the health message may breed contempt for it). The correction of factual errors, such as the common belief that regular brushing automatically produces healthy teeth, is a matter for persistent educational effort, using every possible medium. The erosion of emotional resistances (such as the resistance of many adults to accepting the evidence that masturbation is usually fairly harmless, or the resistance of many children to eating certain foods) is very difficult to bring about by any mass campaign and is perhaps better left to the more intimate planning of local health education schemes.

The examples given above are, of course, a random selection and, in any specific campaign, it is necessary to examine *de novo* the revelations of the preliminary field survey and work out the best method of dealing with them. But, although it is impossible to lay down here any very valuable general procedures, it is essential to emphasise the importance of such planning. We are not so wealthy that we can afford to waste vast sums on ill-conceived health education campaigns. We are not even sure that a carelessly planned campaign will do more good than harm.

Once the objectives which it is hoped to achieve have been identified and some general idea of the routes towards them has been gained, it is possible to begin mapping out the details of the advance and calculating what might be called the " logistics " of the campaign—the ways in which the various available vehicles may best be utilised. It is impossible to discuss this very fruitfully in general terms, since the effective usage of the different vehicles will depend upon the particular aims of the campaign.*

Whatever use be made of material aids in a health campaign, there still remains the traditional public speaker. The tradition has tended to become somewhat discredited because it has in the past often been assumed that any local physician can " give a talk " on any health topic, whereas in fact very few people are effective public speakers. Experience has shown that a most economical

* Suggestions about the use of different media in a centrally planned health education campaign are made in Appendix IV.

method of organisation is for some central agency to employ a team, consisting say of a physician, an educationist, a psychologist and a public health nurse, each of whom is also a fine speaker. During the course of a national campaign such a team can go "on tour," spending perhaps a week in each of the main centres of population and meeting specialist audiences of teachers, youth leaders, physicians, nurses, welfare workers, clergymen, shop stewards, business leaders, sanitary inspectors, food workers and the like. In this way each locality can benefit from really competent speakers, and the general national publicity be thus brought into a local focus. The manifold visual aids now available to the health educator in no way diminish the power of the well-spoken word.

Certainly at the conclusion and perhaps at intervals during the progress of the campaign some effort should be made to evaluate its results. This is a technical matter requiring the services of the same type of personnel as that used in the preliminary survey. The results of such evaluations should provide a very valuable guide in future campaigns and pay for themselves many times over in greater efficiency.

Local Planning

When a local authority organises a special health effort it normally does so in the form of a "Health Week." Such an occasion brings emotional satisfaction to the organisers, just as the excitement of election day does to those who have been drearily addressing envelopes for weeks past ; but, since the objective of health education is public enlightenment rather than private satisfaction, it is necessary to guard against the temptation of over-estimating the value of health weeks. Nevertheless, a well-arranged health week can be invaluable in arousing public interest and influencing public attitudes and, if care is taken to canalise the energy released during the week, permanent benefit may accrue.

If every section of the population is to be reached, thorough and painstaking organisation is needed. The co-operation of the chief local government officers, eminent citizens, representative workers and employers, professional associations of medical and educational workers, and ordinary citizens willing to do some voluntary work must be enlisted two or three months before the chosen week. A list of objectives should be compiled, a draft programme drawn up, and a preliminary budget opened. After discussion, the final shape of the programme should be determined and only departed from when the benefits of so doing are indisputable. Committee members and voluntary helpers always produce last-minute "bright ideas," but if each shining will-o'-the-wisp is followed as it appears, the main path may be insufficiently trod. A limited programme

effected with smooth efficiency is infinitely more valuable than a heavy one creaking at each movement. Some organisational suggestions are given in Appendix V.

Whatever else may be their outcome, the week's activities should leave in the minds of the people a positive sentiment towards health, an unverbalised feeling that "health is good fun." This naturally implies restraint in the display of pathological specimens which the Museums Curator is anxious to lend and strict limitation to lectures which local worthies are dying to deliver. A health week is not a tutorial course, and the emphasis should be on brightness, happiness, fresh air and recreation. This is not the whole story of health, but it is the chapter most appropriate for a health week.

Although much good may be done by means of carefully planned and well-executed special campaigns of a nation-wide or of a local nature, it must be recognised that a health-minded people cannot be produced merely by means of occasional fireworks. There is needed also the less flashy but more penetrating light of persistent health education the whole year round. It must not, however, be thought that such routine, week-in-week-out work can be effectively carried out without the use of some imagination or without careful planning.

Seasonal Relevance

Whether one is considering centrally arranged use of printed word and film and radio, or locally planned public meetings and other publicity, it is important to ensure that the content of the health message is topical. Most of the principal communicable diseases have fairly clearly marked peak periods of dissemination when it is obviously wise to concentrate on publicity with respect to them. Thus, there is the summer and autumn period of food and fly-borne diseases such as gastro-enteritis, the typhoid group, and perhaps poliomyelitis ; the winter crop of influenzas, broncho-pneumonias and spray-borne diseases generally ; the (often bi-annual) outbreaks of measles and whooping-cough in the early months of the year ; and so on. In each locality, the hospital staffs and general practitioners will often have a very shrewd idea of what to expect, while valuable guidance may also be obtained from the findings of the social survey.

Accidents also have a seasonal distribution which gives a useful guide in the planning of safety education. The dark mornings and evenings of the winter months bring their special dangers on the roads, as do the fogs of late autumn and the sudden showers of spring. Snow and ice bring hazard not only to vehicular traffic, but also to children and others who snowball, sledge, slide and skate ; while the warm days of summer increase the number of bathing and

boating fatalities. Each season has its own peculiar risks, and so for each season there is a peculiarly appropriate area of safety education.

At various turning points of the year's seasons there are other appropriate health messages relating to food, clothing, heating and ventilation, domestic hygiene, exercise and rest, and so on. Cold weather calls for more energy foods and warmer clothing, and warm weather for the contrary ; in spring, green vegetables become more readily available and, in autumn, fresh fruits ; in summer, it is doubly necessary to guard food from houseflies and desirable to get the maximum amount of fresh air and sunshine ; in winter, houses must be kept warm and a tendency to stay too much in stuffy rooms avoided. Health education programmes should take account of these seasonal health necessities and take advantage of these seasonal health opportunities.

Many local health authorities already make a practice of sending to children, on their first birthday, cards drawing attention to the value of immunisation against diphtheria. Why not similarly attractive cards to children on their fifth or sixth birthday, pointing out that they are now at school and emphasising that they can avoid the spread of communicable diseases by staying at home when they have coughs and colds ; on the twelfth birthday, congratulating the child on now being at a secondary school and suggesting the names of one or two appropriate health books which might be borrowed from the public library ; on the eighteenth birthday, pointing out that the recipient is now virtually adult and stressing the responsibility of all adults for the health of the community ? Why not a card of congratulation to newly married couples, giving the address of local organisations existing to help in the building of happy marriage ; and another card to parents on the birth of each child, giving the addresses of the local infant welfare clinics ? It should be a simple enough matter to obtain the necessary lists of names and addresses for all these purposes from official records.

The idea of greetings cards might also be applied on a seasonal basis. Local professional associations and trade unions could supply lists of doctors, teachers, nurses, shop stewards, etc., to whom might be sent a New Year card bearing a brief outline of local health objectives for the coming year, with an invitation to help in achieving them. County Colleges could supply annual lists of entrants, to whom a Valentine card might be sent, leading from a jocular reference to " a sound heart " to a brief statement of the importance of general health. Infant Welfare clinics could give lists of children to whom might be sent Easter cards, stressing the value of eggs as food the whole year round. For Guy Fawkes day,

cards might be distributed emphasising the need for care in the use of fireworks. For St. George's day a card might be distributed to Boy Scouts, Girl Guides and the like, pointing out how they can help to defeat the " dragon of disease." Local motorists might be sent Christmas cards, leading on from a general message of good cheer to an exhortation not to drive soon after consuming alcohol. The quarter days might be the occasion for messages, suggesting a health stock-taking, to legal and financial workers. A little local initiative along these lines would be worth much central planning.

Another means of achieving topicality of health message is the intelligent use of historical reference books, from which can be abstracted the dates of birth, death and important contributions of famous pioneers of medicine. Such anniversaries might be utilised for school lessons, short radio talks and dramatisations, feature articles in newspapers and, in suitable cases, exhibitions.

Care is, naturally, needed to ensure that enthusiastic but unintelligent following of the seasons does not produce ridiculous results ; but it is possible to combine intelligence with enthusiasm and a valuable programme may thus be produced.*

Some elements in a community health education programme apply equally to all citizens, but one must remember that " the man in the street " may be a woman or a child who does not spend very much time in the street. It is, therefore, important to ensure that, in addition to those educational measures which are directed to the community at large, others are directed to the many interpenetrating social groupings to which our people belong. The child out of school, the young adult, the housewife, the parent-to-be, the workers in field and factory and shop and office—all have their special health problems and all present their special health education opportunities. The youth organisation, the co-operative guild, the women's club, the trades council, the political party, the professional association, the sports club—each has its particular angle of view on matters of health significance and each can be activated in its own particular way. A really comprehensive health education programme will search out all these social groupings and deal with them as their special natures require.

The Child

The child out of school is still the same child as during school hours, and there are no new principles involved in planning for his health education as part of a community programme. If the local health and education authorities are working closely together it

* Some suggestions for seasonal planning are given in Appendix VI.

should be possible to arrange that all necessary factual instruction is carried out in school, but something can be done to bring even the school child within the influence of the general community health education activity. By the establishment of friendly relations with the local cinema manager, health " shorts " can be introduced into Saturday morning film shows. Juvenile organisations, such as the Woodcraft Folk or the Boy Scouts or the Girl Guides, will normally welcome the opportunity of receiving a visiting speaker from the local health department or other health promoting agency, and will often provide volunteers to help in the execution of local health education plans. Children of all ages will crowd into really interesting health exhibitions, provided that there are some knobs to press and a few handles to pull. Out of school, as in school, the child is instinct with latent curiosity and all that is necessary is to activate and then satisfy it. There are, moreover, many routines of child behaviour (such as, for example, that of going to bed at a reasonable hour) which it is very difficult for the individual home to establish, but which are readily accepted by the children and become almost automatic when agreed between and encouraged by a whole neighbourhood.

Nor should we lose sight of the inestimable effect of a well-run school on the whole neighbourhood. Many good nursery schools have shown in a striking manner how subtly, yet how powerfully, the example of the school can raise high the standards of the surrounding homes. Other types of school, no doubt, could exert a similar leavening influence if the teachers were sufficiently aware of the possibility and took the initiative in their own school's neighbourhood.

The Adolescent

The older adolescent or young adult is, in most cases, no longer attending school or college (though the position will change as more County Colleges come into being and swing into action) and his health education must be effected through other channels, and mainly through his daily work and his youth organisation. In many respects the former offers the greater opportunities, but rarely are they grasped. Yet, on entering their first job, young people usually feel for the first time that they are now adult members of society, and such a frame of mind is most conducive to an appreciation of responsibilities, including responsibility for personal and social health.

Those few enlightened employers who have allowed time for and spent money on the health education of their young workers have had excellent results. Improved posture, better eating habits, more wholesome attitudes to sex, greater understanding of the health

problems of the community, can all result from comparatively little effort in young people's work places. This field for health education is as yet but little cultivated, yet in it lie those thousands of young people who never join a youth organisation of any sort whatever. A local authority which took health education seriously would not rest until all employers in its area were giving full co-operation.

In the case of those who do join youth organisations, other opportunities arise. Most adolescents are intensely interested in how things work, and there is no working more fascinating than that of the human body and mind. Except in the case of those organisations which carry out " badge " or " test " work, the instruction is unlikely to be formal in nature, but it can be none the less (or, maybe, all the more) valuable. Perhaps arising from interest in first aid, perhaps from desire for physical fitness, perhaps from a joke about flirtation, perhaps from a grumble about the club canteen, vital discussions of health matters can be provoked. They may be initially uninformed and badly biassed but, once the interest is aroused, the club leader can guide it towards the acquisition of accurate knowledge and the development of a balanced outlook. No fixed scheme for such education can be devised, for its very nature lies in spontaneity ; but the youth leader who is interested in health education can learn to seize opportunities as they arise and make a considerable most of them, provided that he is prepared to face the very searching criticism of conventional standards which any discussion of behaviour by young people always produces.

This is most noticeably, although not exclusively, the case where sex relations are concerned. Older adolescents and young adults, sexually maturing or mature and yet with no immediate prospect of marriage, are inevitably concerned with problems of sex behaviour, and any community programme for health education must take this concern into account. It is not so much a question of factual instruction (although there is still some need for this) as of guidance in such matters as boy-girl friendships, necking and petting, flirtation, masturbation, pre-marital sex experience and so on. This guidance, moreover, must be not mere dogmatising or condemnation : what is needed is honest discussion, with no questions barred and all points of view welcomed. Experience shows very clearly that most young people, once they have learned to trust and respect an adult, can derive great advantage from such discussion and will make a real effort to arrive at a sober personal judgment on the issues involved.

One of the features characteristic of adolescence is the marked growth of capacity for critical judgment, with the consequent persistent demand for a rational justification for habits already inculcated and for the standards of behaviour demanded by adult

society. It is, of course, true that young people acquire their ideals, which provide the emotional drive necessary for self-disciplined behaviour, largely by emulation of the adults with whom they come into contact. Nevertheless, if these ideals are to be firm and lasting, they must be fortified by rational conviction of their desirability. This implies complete honesty in health teaching, honesty such as has been sadly lacking in many cases in the past. Much of the propaganda for thrice daily brushing of the teeth, frequent hot and soapy baths, complete abstinence from tobacco and alcohol and so on, has been intellectually dishonest. To imply that teeth will necessarily go bad if they are not brushed and will remain healthy if they are brushed is false. To say that skin cannot be kept healthy without a daily all-over scouring is untrue. To pretend that an occasional cigarette or an odd half-pint of beer will ruin health is grossly untrue. Yet these, or somewhat similar, statements are still often made or implied in the name of health education. One can, however, honestly say that brushing teeth makes them bright and attractive, that fairly frequent bathing gets rid of unpleasant odours and is itself enjoyable, that nicotine and alcohol are drugs and therefore offer a challenge to self-discipline and an opportunity for temperance. It is only on these lines, of complete honesty and lack of pretence, that health education can hope to marshal ideals and reason in common support instead of in mutual destruction. And, if young people can be taught to discuss ideas honestly and objectively, to look upon the different views and practices of others with charity, and to face the world with confidence and a fine vision, the possibility of an occasional carious tooth or a slight shortage of breath will be seen in proper perspective.

There is always a minority of older adolescents who, triumphantly surmounting the obstacles of insufficient schooling, long hours of work, and general social underestimation of the intellect, will settle down to serious study of almost any problem to which their attention may be directed. This is the fine stuff of which the solid kernels of youth clubs are composed and which will later produce adult discussion group leaders, shop stewards, professional workers and the like. Although small in number, these young people warrant the closest care, for they are the ones who very largely set the tone of their own small social groupings. They can be set discussing problems of personal health, family health and social health; making studies of local public health services; collecting and criticising advertisements and articles from the popular Press.

It is unlikely, however, that the great majority of older adolescents will ever be prepared to take this deep intellectual interest in health, and some other incentive must be found. The finding is not very difficult, for most young people can be encouraged to take great

pride in their physical development and attractiveness. The linkage of health education with physical recreation, however, must not be allowed to lead to a " bulging biceps " conception of health. Mere muscular exercise can very easily be overdone, especially by adolescents, many of whom most need relaxation and rest. Pride in bodily fitness is, nevertheless, a pride worth fostering, as is pride in bodily beauty and attractiveness. The adolescent boy may not attach much weight to lectures on the immorality of alcohol and tobacco and late hours, but he may be temperate and take sufficient sleep in order to run or wrestle more effectively. The adolescent girl who is not very likely to be impressed by academic arguments of hygiene may comb her hair and clean her teeth and attend to her nails and skin because thereby she is rendered more attractive. Nor is this by any means a clear-cut sex difference. Girls also (albeit a little self-consciously) seek physical efficiency and boys (albeit somewhat shamefacedly) physical attractiveness. Let us help them to get rid of their emotional reservations and seek fitness and beauty as things which are good.

Adults

The older children and adolescents will, before many years have passed, be contemplating marriage, and a new opportunity for community health education opens up. With pitifully small resources a few pioneer efforts at marriage counselling have been made, but one looks forward to the day when such facilities will be readily available for every citizen.* It would be a pity, however, if it came to be accepted that the only advice which engaged couples sought was that relating to sexual relations and contraception. One can envisage what might be called a " home-making centre," to which would come all prospective spouses for short educational courses and which would be equipped not only for marriage guidance in the usual narrow sense of that phrase, but for advice on domestic budgeting, home cooking, house purchase, minor decorating and household repairs, and all the many matters arising in married life. Here also there would be facilities for a full medical examination and for discussions on all aspects of personal relationships in marriage. Such a centre could come to mean a great deal in the lives of the local citizens and would pay magnificent dividends in married health and happiness.

Closely linked with work of this sort might be arrangements for parentcraft training. All prospective parents (father equally with mother) need an understanding of child development and matura-

* The British Government has now made financial grants to reputable marriage guidance organisations and is financing the training of marriage counsellors.

tion as something infinitely more complex than the mere accretion of years, inches and ounces. They require education in the physical, intellectual, emotional and social needs of the growing child and in the ways in which family life can meet these needs. They require an appreciation of what changes the advent of children will bring to their own activities and interests. Only a small minority of such parents are likely to attend evening lectures in local schools, but many would come to well-planned centres such as those contemplated, with bright rooms, instructive models, self-operated projectors, comfortable libraries and opportunities for private consultation and group discussion. It is useless for health educators to bemoan the difficulty of "getting at parents": parents do not want to be "got at," they must be enticed by the provision of facilities which are irresistibly attractive.

Prospective mothers, naturally, require special attention. Countless thousands still go through pregnancy without ever really understanding what is happening to them, and too many doctors and midwives still seem content that this should be so. Yet it has been demonstrated beyond serious doubt that, by adequate preparation, child birth can be relieved of much of its fear and pain. We cannot rest until all mothers, in addition to the normal ante-natal attention which they have hitherto received, are given a much fuller education for motherhood. By patient explanation and sympathetic discussion, the doctor can get rid of obscure worries and terrors and can secure the intelligent co-operation of the mother in what should be for her a great and fine experience. By physical training during pregnancy the mother's muscles can be tuned up for what has been termed the "athletic feat" of childbirth. By relaxation exercises during pregnancy the mother can learn how to give active help during the actual process of parturition. We must look forward to the day when at all clinics and maternity hospitals such aid is given as a normal thing, and the expectant mother finds also someone to help her with her domestic problems and difficulties, someone to give wise advice on the simple hygiene of pregnancy, some attractively presented information on diet and clothing and the like, and facilities for browsing among simple books and viewing short films. In short, we must hope that one day it will be universally recognised that the most important person at any birth is not the obstetrician or the midwife, but the mother.

The baby once born, new problems arise requiring different educational techniques. In general, the health visiting service has reached a fairly satisfactory stage of development in Britain and most health visitors find themselves welcome visitors in "their" homes. Women pregnant and suckling are especially receptive of advice and, in most areas, the advice they receive on such matters

as breast feeding, diet and minor child ailments is good. There are, however, other matters upon which education is equally important. Health visitors could do much to inculcate a general understanding of the principles of child growth and development and, in particular, to disabuse parents of the idea that their child should conform to the various " norms " of height, weight, tooth eruption and the like which occur in such profusion (and often in such contradiction) in the many manuals of child care. They could help to persuade parents to take a rational view of such matters as bowel and bladder control, infantile masturbation, nudity, early sex education and so on. And very often, mothers would be most grateful for advice or reference to clinics dealing with contraception and family planning. Finally, health visitors could do invaluable work if they made a point of sometimes seeing fathers in the home, as well as mothers.

As the years go by, the special health needs and problems of the individual change, and a comprehensive health education programme will take account of these changes. For example, the middle-aged men and women who constitute the bulk of the membership of Co-operative Guilds, Women's Institutes, Men's Clubs, Rotary and the like form a natural unit for health education purposes, and efforts should be made to persuade such groups to accept speakers and films on topics of special interest and value to the middle-aged. Similarly, the old folk of the community, who now form each year a numerically greater proportion of it, need special attention which will help them to feel that they still have a useful function in society, to develop quieter forms of recreation appropriate to their slower tempo of life, and thus to obviate the danger of developing neurotic illnesses as a means of obtaining attention.

Social Groupings

It is not, however, merely a matter of catering for different age-groupings in the community. Social units are manifold and interpenetrating, and the planner of health education must seize opportunities wherever they are offered by any form of grouping with common interests. In many cases, such a common interest may be the fact of having children at some common stage of social development. The parents of children at a nursery school, of new entrants to a primary school, of children transferring to a secondary school, of those about to leave school, of adolescents joining youth organisations—each group of such parents forms each year a natural unit. The community health education programme, therefore, should each year provide for gathering together these natural units for meetings at which the special needs of their children can be expounded and discussed, and for the circulation to

the parents concerned of literature relating to these special needs. Such comprehensive plans, carried out year by year, would have a quite considerable cumulative effect upon the health consciousness of the community. Unfortunately, this type of work, slow and onerous and unpublicised, does not seem to appeal to local authorities as do the more spectacular "health weeks" and the like. It requires, moreover, far more time and attention than can be given by any official but one whose full-time post is that of health educator.

Similar opportunities await the health educator in the many natural units implicit in the industrial organisation of modern society. In factories, stores and offices there is concentrated each working day a considerable proportion of the total population of each community, already organised in convenient groups. Where a large enterprise has an actively functioning health committee, with representatives of management and workers, medical and welfare departments, men and women employees, adults and juveniles, most valuable health education may be effected. So long as care is taken to ensure the active co-operation of the workers themselves, so long as the workers are not expected to give up too much of their meal and rest breaks for the purpose, and so long as the educational programme clearly relates health theory to the health practice of the enterprise, it is possible to run most successful film shows, health talks and quizzes, exhibitions, discussions and so on. Some progressive employers and works committees have already shown what can be done, but local authorities themselves should take the initiative in securing the general adoption of such programmes in their own areas.

There are, however, occupational groupings apart from those determined by place of employment. Each occupation has its special health hazards and thus requires its own specially devised health education programme. For example, in an area with underground workers or cutlery grinders, it would be necessary to give particular attention to education relating to respiratory diseases (including tuberculosis) and heart diseases. Workers in clay and pottery are specially liable to bronchitis and allied complaints, as are dock labourers, cotton workers and stonemasons. In addition to these somewhat localised occupations, there are in every community others with peculiar health risks. Publicans, bartenders and waiters have excessive mortality from most causes (and especially from cirrhosis of the liver); costermongers and barrow boys suffer from respiratory tuberculosis, bronchitis, pneumonia and chronic nephritis; barristers and actors are troubled particularly by digestive diseases; plumbers, painters and decorators by lead poisoning and skin afflictions; chimney sweeps, food and drink

servers, some metal and chemical workers, and cotton spinners seem to have high rates of cancer incidence ; and so the catalogue might continue.* The details must be worked out on the basis of an analysis of the occupational distribution of each local community, but it seems in general clear that an intelligently devised health education programme must take account of such facts and must devise ways of reaching each special occupational group. This will not be an easy task, for the mode of approach to a barrister would have to be radically different from that to a costermonger or a chimney sweep, but there exists some way to the interest of each individual and it is the health educator's task to discover and traverse these ways.

The Health Educator

The organisation of community-wide programmes of health education is, therefore, a complex matter requiring special knowledge and special skill. It cannot safely be left to the marginal attention of an already overworked medical officer or education officer. The person in charge of such a programme needs to carry out periodic surveys of the health knowledge, habits and attitudes of the community ; to plan and execute the educational work indicated by such surveys ; to bring into this work all the many official and voluntary agencies which can contribute to it ; to arrange, in co-operation with the professional groups concerned, special " refresher " courses for doctors, nurses, teachers, caterers and so on ; to organise an advice bureau for the casual caller and to maintain liaison between the already existing specialist advisory centres ; to prepare, assemble, display and distribute health education material of all kinds ; and to do all this without treading on the many sensitive professional corns awaiting the unwary foot.

As the importance of careful planning of community health education becomes increasingly appreciated, the need for the recognition of a new occupation of " health educator " becomes clearer. Already, in the United States of America, national and local government agencies have made many such appointments, and there have been a few similar successful experiments in Britain. It will, no doubt, be some time before generally accepted professional qualifications are established, but the general lines are already fairly clear. The successful health educator will require (apart from considerations of personality and general culture) a basic training in the science of health, in the psychology and methods of education, in the social sciences, and in public relations and administration.

Until specially devised courses of professional training are more

* Many of these occupational afflictions are nowadays less common than formerly.

generally available,* it will be necessary for those who wish to equip themselves for such posts to widen their knowledge and understanding of the particular areas in which they are deficient.

Such special training at present ranges from attendance at a single short conference to participation in comprehensive courses and summer schools, and its value is not to be minimised. There is, however, a real need for something much more thorough than this. Teachers who are sacrificing part of their well-earned vacations, doctors who are each facing the expense of engaging a *locum tenens*, social workers who are worried about what is happening in their area while they are away, cannot reasonably be expected to give the time and effort needed for really fruitful study of the problems and potentialities of health education. It is, therefore, to be hoped that, before very long, arrangements will be made to allow such persons leave of absence for periods of a month or more, that they may pool their experiences and ideas. We are gradually filling the biggest gap in our corps of teachers, while health and social workers are increasingly coming within the framework of national and local government, and it ought soon to be possible to second representatives to attend study courses without sacrifice of vacation or bank balance.

It is important that such study courses should be varied, not only in context but in personnel. Each professional group has already ample opportunity for intellectual in-breeding : it is the invigorating effect of cross-fertilisation that is most lacking. One can imagine (and, unfortunately, we are as yet largely limited to imagination) how much of value would emerge from a month's co-operative study by a mixed group of parents, teachers, youth leaders, doctors, health visitors, administrators, clergymen, social workers, marriage counsellors, industrial welfare workers and the like. How much each would benefit from the special knowledge and experience of each other, and how many pet notions each would have to discard ! There would be little need for " expert " lecturers, for what extra knowledge each needed could probably be supplied by another and what greater understanding all needed would emerge from their joint discussions. Unfortunately, most of us are so wedded to the traditional procedure of listening to lectures, and some of us so love having others to lecture to, that the idea of such a " working party " bears a tinge of Utopianism. Yet, although its programme bore not a single distinguished name, such a workshop might be more fruitful than a summer school advertised by the shining lights of a dozen " acknowledged experts."

What this comes to, in effect, is a plea for the democratisation of health education. Excellent work has in the past been done by

* See Appendix VII for a suggested course of training.

socially-minded doctors, health-minded educationists and educationally-minded social workers, but each has tended to remain in his own special field. Yet democracy involves not only doing one's own special job well, but also co-operating with other specialists as fellow citizens in communal tasks ; and here in health education is a job for the whole community—a job which will not be well done until all the natural health educators break through the boundaries between their separate fields, place their specialist tools at each other's disposal, and till the great new common field together.

APPENDIX I

AN ONTOGENETIC SCHEME FOR HEALTH EDUCATION

It is clearly impossible to fit a complex educational process into a few simple pigeon-holes and he who attempts the impossible is sure to fail. Nevertheless, it seemed to the author that the attempt should be made, since in the process of failing so much can be learned.

The result of the attempt is presented in this appendix. For each major stage in the individual's development (these admittedly arbitrary stages being determined by a combination of physiological, psychological and social criteria), a list of desirable elements in health education is given. These elements are placed in five columns, representing respectively assumptions to be adopted, habits to be acquired, knowledge to be gained, attitudes to be formed, and appreciations to be developed.

Recognising the extremely tentative nature of any such comprehensive scheme, the author would warmly welcome criticism of it.

APPEN

AN ONTOGENETIC SCHEME

CHARACTERISTICS of stage	STAGE	ASSUMPTIONS to be adopted	HABITS to be acquired
Rapid growth, with consequent need for food, rest, and opportunities for exercise ; some teeth erupt ; becoming adapted to other food than milk ; rapidly acquiring bodily co-ordinations. Becoming aware of self as an individual and reacting to others ; interested in excretory functions ; tendency to infantile masturbation.	0 years I N F A N T	*Based mainly on handling by mother and mother-substitutes.* Life is pleasant, secure, regular and unharassed. People are kind and friendly.	*Based on regular (but not fanatically so) daily routine.* Regular feeding, bowel and bladder action, exercise, rest and sleep, etc. ; with slowly increasing control of these functions.
Growth rate slowing down ; bones not yet fully calcified ; deciduous teeth complete by age of about three ; big muscles developing well, but motor skill still uncertain ; increasing activity and hence tendency to fatigue. Developing feeling of independence, with tendency to resent adult interference ; spectacular intellectual growth. Shows interest in sex organs and processes, leading to much questioning and often to genital play. Social contacts increasing, leading to rapid expansion of language, greater maturity of behaviour and to increased risk of contracting communicable diseases.	About 2 years T O D D L E R About 5 years	*Based mainly on observation of home routine.* Continuation of above. The body and its functions are natural and not "unclean," but certain functions are normally effected by older people in privacy. Members of family help each other in all sorts of ways. People take some care with the cleanliness of themselves and their surroundings. One goes to bed and gets up without fuss at the required times. One eats meals without making undue fuss about personal likes and dislikes. One exercises general care but is not unduly timorous. One accepts minor accidents without making a great fuss. One co-operates amicably in play with other children. One respects one's own and other people's property.	*Based mainly on consistent practice in the home.* Confirmation in above. Increasingly attending to own toilet needs. Performance of one or two small household jobs, (*e.g.*, putting mats on table). Increasingly helping with bathing self, brushing hair, caring for clothes, etc. Washing hands after using W.C. and before touching food ; covering coughs and sneezes ; cleaning teeth. Occasionally helping in cleaning house. Regular periods of sleep and rest. Eating heartily and in a reasonably conventional manner. Chewing food thoroughly. Crossing road carefully. Not playing with matches, flames, hot pans and kettles, gas and electric appliances, medicines, etc. Asking adult to attend to minor injuries. Sharing toys. Taking turns. Looking after toys, books, etc., reasonably carefully.

DIX I
FOR HEALTH EDUCATION

KNOWLEDGE to be gained	ATTITUDES to be formed	APPRECIATIONS to be developed
Based on observation of behaviour of family members.	*Based on attitudes displayed by family members.*	*Not yet sufficiently crystal lised to warrant mention.*
Non-verbalised awareness of the way people conduct their lives day by day in the family circle.	Friendliness to family members. Willingness to fit in with daily home routine.	
Beginnings of vocabulary for parts of the body and for some bodily processes.	Willingness to try new foods. Normalcy towards body and its functions.	
Based mainly on observation and replies to questions in the home.	*Based mainly on parental attitudes and approval of appropriate behaviour.*	*Based mainly on characte of parents and sibling*
Consolidation of above.	Deepening of above.	Still rather generalise
Simple vocabulary for bodily parts and functions.	Joy and pride in body.	but beginning to ideali courage, skill, vigou attractiveness, kindnes
Elementary understanding of how the body works.	Respect for elders' wish for bodily privacy on occasion.	etc.
Sharing work makes running of house easier.	Willingness to give help when requested.	
Babies need helping by older children.	Desire to help occasionally without specific request. Tenderness towards babies.	
Neat and tidy children are the better liked by adults.	Preference for cleanliness of self and surroundings on appropriate occasions (*e.g.*, before going to bed ; when visiting friends).	
Simple ideas about "germs" as disease agents ; reasons for anti-infection practices.	Pride in being able to do some things for one's self.	
Young children need more sleep than older children and adults.	Willingness to fit in with imposed schedule of going to bed and getting up.	
Good food builds strong bodies. Milk and cod-liver oil are specially good for bones and teeth. Fresh fruit and vegetables are specially good for the skin.	Pleasure in food. Sociability at meals.	
Many children are killed and injured by motor vehicles. Burns are painful and may be dangerous. Fire, gas and electricity may kill people.	Healthy respect for the dangerous potentialities of the world, but without timidity.	
Germs in cuts may cause illness. Antiseptics kill germs.	Fortitude rather than self-pity.	
Exercise, fresh air and sunshine promote health.	Liking for play. Friendliness, toleration, helpfulness.	
Dirty things harbour germs. Broken things cause accidents. Somebody has to pay for things.	Pleasure in well-kept books and play materials ; distaste for careless damage.	

CHARACTERISTICS of stage	STAGE	ASSUMPTIONS to be adopted	HABITS to be acquired
Growth fairly slow and steady, with spurt in many cases (especially girls) towards end of period; deciduous teeth being replaced by permanent set; leg bones, large muscles, and heart growing fairly rapidly between 5–8 years; small muscles grow and co-ordination improves markedly in later years; enjoying activity and physical achievement; eyes complete growth during first half of period; much rest needed; some girls begin menstruation about end of period. Rapid increase in knowledge, powers of concentration and vocabulary; enjoying mental achievement; inquisitiveness about sex, and adoration of babies, especially in earlier years; often a tendency to aggressiveness. Social contacts wider, with marked tendency to gangs; tendency to co-operativeness; many contacts leading (especially in earlier school years) to increased risk of infection and of accidents; attendance at school may bring certain worries, fears, and uncertainties.	About 5 years PRIMARY SCHOLAR	*Based mainly on observation of home and school routine.* Continuation of above. One does more for oneself as one grows older. One helps more in the home as one grows older. Schools are well designed, comfortable and well kept. School life is orderly, unruffled and happy. One fits in with general school requirements of behaviour. One fits in with general community health procedures.	*Based mainly on consistent practice in home and school.* Confirmation in above. Caring for own body and possessions to a higher standard of efficiency. More consistently blowing nose, covering coughs and sneezes, leaving bathrooms clean, etc. Exercising initiative and care in novel situations. Performance of more regular household jobs (*e.g.*, cleaning shoes, laying table). Using own clothes-hook, own towel, etc. Leaving cloakrooms and lavatories clean after use. Co-operating amicably in arrangements for milk and meals, in games, etc. Using bins, waste receptacles, drinking fountains, public lavatories, etc., properly.
Very rapid spurt of growth at onset of adolescence (earlier in girls than in boys); most permanent teeth expected by 14 years; rapid muscular growth, often accompanied by temporary lack of co-ordination and poor posture; often with ravenous appetite; often easily tired; rapid maturation of sex organs, with development of secondary sexual characters; onset of menstruation in girls and often seminal emission in boys; sometimes endocrine instability, accompanied by acne, headaches, etc. Developing marked individuality and independence, often with impatience of adults (especially parents) and their ways; often rather worried and embarrassed by sexual development and sex problems; developing wider intellectual horizons, often with avid desire for knowledge. Gangs gradually give way to small groups of close friends; boys and girls develop liking for each other's company and form tentative pairs; tendency to develop keen interest in own appearance; often showing a keen interest in society and its needs.	About 11 years SECONDARY SCHOLAR About 16 years	*Based mainly on observation of home and school routine and behaviour of friends.* Continuation of above. As one grows older, one gradually assumes almost complete responsibility for one's own health behaviour. Older children take greater care with personal cleanliness. Increasing independence implies greater voluntary co-operation in running home. One co-operates in most school activities. One takes an intelligent interest in the life of the community. As one grows older, one's attitudes and interests (including those towards sex) alter, and this is quite normal and natural.	*Based mainly on consistent practice in home, school, youth organisation, etc.* Confirmation in above. Care with posture, breathing, exercise, rest, etc. Choice of appropriate food, clothes, etc. More meticulous personal grooming. Almost invariable observance of health habits relating to coughing and sneezing, spitting, washing after W.C. and before handling food, etc. Gradually taking complete charge of own bed or bedroom, own clothes, etc. Helping more in house. Dealing carefully with refuse, garbage, house flies, etc. Joyfully taking part in some school games, societies, etc. Helping to keep classroom conditions hygienic (*e.g.*, ventilation, lighting, cleanliness). Hygienic use of public conveniences, public vehicles, public buildings, etc. Reading newspapers critically. Exercising self-discipline (including relations with other sex). Using leisure fruitfully.

(*continued*)

KNOWLEDGE to be gained	ATTITUDES to be formed	APPRECIATIONS to be developed
Based partly on parental instruction, but increasingly on content of school lessons.	*Based mainly on approval of appropriate behaviour by parents, teachers and friends.*	*Based mainly on character of admired adults and older children.*
Consolidation of above.	Deepening of above.	Sharpening of above.
Increasing knowledge of and vocabulary for structure and functioning of body *e.g.*, nutrition ; choice of appropriate clothing ; care of eyes, ears, teeth and skin ; care of cuts and scratches). How to cope with street crossing, gas and electrical equipment, matches, etc. How to spend pocket money wisely.	Increasing preference for cleanliness and neatness of self and possessions. Pride in increasing abilities and pleasure in high standard of achievement.	Efficiency.
Elements of home hygiene (*e.g.*, value of cleaning floors and carpets, protecting foodstuffs, preparing meals). Family life and baby care in animals, including humans.	Deepening preference for cleanliness and tidiness about the house. Willingness to be increasingly helpful, especially to younger children.	Family solidarity.
Value of fresh air, sunlight, exercise, etc. More about germs, how they are spread and how spread may be prevented in school. First elements of community hygiene.	Developing responsibility for health of school community.	Solidarity with teacher.
Value of work of doctors, nurses, caretakers, cleaners, dustmen, food inspectors, policemen, etc. Lives and work of some health pioneers.	Developing willingness to co-operate in maintaining community health. Admiration for health workers.	Service to others. Courage.
Based increasingly on specific school instruction and private reading.	*Based partly on approval of appropriate behaviour by others, but also on motivation by crystallising ideals.*	*Based mainly on admi adults, fictional and h torical heroes.*
Consolidation of above.	Deepening of above.	Sharpening of above.
Systematisation of knowledge of human body and how it works ; mental health. How to adapt general health principles to specific situations. Danger of excessive self-medication.	Admiration for physical vigour and efficiency, tempered by realisation that bodily health and skill are not all-important in life.	Poise and efficiency.
How to care for teeth, hair, skin (including use of cosmetics), eyes, ears, feet, etc. More about pathogens, methods of spread of main communicable diseases, personal and social measures for prevention of spread, inoculation, etc.	Pride in personal appearance, poise, cleanliness and attractiveness. Responsibility for avoiding spread of disease.	Physical beauty.
Elements of domestic hygiene. Food values, preparation and cooking of food, relative values of various beverages (including alcoholic).	Readiness to help in home without being asked to do so. Preference for a clean and tidy house.	Helpfulness.
Elements of school hygiene (*e.g.*, effect of dust, stuffiness, communal towels, communal drinking, etc). Value of physical and mental recreation.	Determination to do utmost to keep school clean and healthy. Respect for fellow pupils and teachers.	Social group solidarity
Effect of social and economic conditions on health. Outline of public health services, work of national and local health committees.	Respect for what the community does for health. Feeling of responsibility as a member of the community.	Social service.
Outline of human development (including adolescence, hygiene of menstruation, seminal emission, masturbation). Deeper understanding of values in sex relations, family life, child care, etc.	Pride in becoming adult. Balanced interest in other sex, neither obsessive nor priggish. Considerateness towards other sex, old folk, pregnant women, etc.	Maturity.

APPENDIX I

CHARACTERISTICS of stage	STAGE	ASSUMPTIONS to be adopted	HABITS to be acquired
From about 16–20 years, completing major bodily changes to adult form ; appetite often voracious during these years ; tendency to over-exertion and marked risk of tuberculosis in early adult life ; tendency to insufficient exercise and over-eating in middle and later life ; gradual settling down of endocrine system.	About 16 years	*Based on observation of fellow-workers, parents, youth leaders, employers, shop stewards, etc.* Continuation of above.	*Based on consistent practice* in *home, work, and wider community.* Confirmation in above.
	W	Education continues after leaving school.	Continuing part-time study and private reading. Engaging in physical, intellectual and artistic activities.
Maturation of outlook, with balancing of emotional pattern ; in many cases a tendency to abandonment of intellectual pursuits, with mental ossification ; development of love, usually leading to richer emotional life.	O R K	As an adult, one has new freedoms and new responsibilities in the home.	Taking full and responsible share in family life.
Full adult participation in society, leading to characteristic risks (of motor vehicle accidents, excessive alcohol and smoking, venereal infection, occupational hazards and diseases, etc.).	E R	As a worker, one must set up a new rhythm of life.	Taking sufficient food, exercise, rest, etc. Care of eyes, posture, skin, teeth, etc. Observance of safety precautions at work.
In most cases, selection of definite mate. In many cases full development of social interests.		As a citizen, one takes an intelligent interest and active part in the life of the community.	Keeping eyes and ears open for opportunities of serving the community and of improving the community's services.
Development of sexual efficiency ; sometimes tending to neglect other physical activities.	S P	Marriage is a happy, rich and fruitful experience.	Exercising consideration for partner. Discussing frankly any differences of opinion.
Enrichment of emotional life, often radiating beyond sex to a much wider area.	O	As a married person, one must set up a new routine of life.	Seeking new opportunities for healthful living. Cultivating common interests and activities.
Tendency to concentrate on spouse, often to exclusion of other desirable social contacts ; increased awareness of the family as a social unit.	U S E	The married couple form an element in the wider society.	Developing new social contacts. Taking intelligent interest in life of community.
Changes of pregnancy and lactation in mother, with need for care in diet, rest, posture, etc.	P	Having children is part of the fullness of life.	Sharing children's activities. Enjoying children's company.
Growth of fresh emotions in both parents, with need to achieve a new emotional balance.	A R	Having children implies certain responsibilities towards them.	Exercising intelligent care in rearing children.
Tendency to concentrate social life within the home, often excessively so ; need to develop outside interests, especially when children grow up.	E N T	Having children does not exclude wider interests.	Maintaining some out-of-home interests. Husband making special efforts to help wife to do so.

(concluded)

KNOWLEDGE to be gained	ATTITUDES to be formed	APPRECIATIONS to be developed
Based on observation, conversation, part-time study and private reading.	*Based increasingly on rational consideration of relevant facts and on developing ideals.*	*Building up as part of a c herent ideology.*
Consolidation of above.	Deepening of above.	Sharpening of above.
Although probably forgetting many school-learned details, remembering essential facts and general principles.	Readiness to welcome new ideas and to exercise discrimination in choice of beliefs.	Intellectual integrity.
Increasing understanding of family relationships and values. Fuller knowledge of facts of sex and maturer appreciation of appropriate relations between sexes.	Companionability towards parents. Readiness to appreciate parents' point of view, where opinions differ. Helpfulness to younger siblings. Healthy orientation towards other sex.	Toleration.
Fuller understanding of health requirements and how they may be met. Health and safety regulations concerning job. Health hazards of own job and how to minimise them.	Regarding physician as guide to health rather than merely as a curer of disease. Scepticism about "bottle of medicine" and "old wives' tales." Willingness to insist on observance of health and safety regulations at work.	Working group solidari
Increasing knowledge of local and national health services and facilities. Work of voluntary health organisations.	Willingness to serve fellow citizens. Interest in local and national government.	Socia service.
Fuller knowledge of sexual techniques. Understanding of emotional peculiarities of two sexes in general and partner in particular.	Patience in emotional difficulties. Willingness to compromise in reaching agreement on points at dispute. Regarding partner as still one's lover.	Richness of sexual lov
How to run a home. Hygiene of the home. Economics of family life.	Willingness to adapt routine of bachelordom to new situation of marriage.	Warmth of compan ship.
Something of history and sociology of the family. How the home depends on public services. Organisations which exist to provide health service, advice, etc.	Determination not to become completely immersed in home, to exclusion of wider interests.	Social duty.
How to make contact with children mutually enjoyable.	Friendliness to children.	Richness of parental
Outline of child nature, development and care. How to deal with common childhood hazards, illnesses, behaviour problems, etc. How to play effective part in health including sex) education of children.	Feeling responsibility for children, without being unduly weighed down by it. Willingness for children gradually to achieve independence.	Individuality of child.
Community activities available in new domestic circumstances.	Willingness to accept some concentration of interests inside family circle. Determination not to be entirely contained by this circle.	Need to develop personality.

APPENDIX II

HEALTH EDUCATION THROUGH CURRICULUM SUBJECTS

THE working out of a comprehensive scheme for the utilisation of the normal school curriculum subjects for purposes of health education will be a considerable task, but in the meanwhile a few suggestions to this end are given below. Health education concerns the whole curriculum and much of it may best be introduced in the form of incidental references made as opportunity offers.* Teachers may find these suggestions useful as a basis for a staff discussion of the school's health education programme, designed to ensure that these opportunities, occurring in most subjects of the curriculum, may be taken and not overlooked. This appendix constitutes only a first tentative framework and the author would greatly appreciate any criticisms or further suggestions.

PHYSICAL EDUCATION

General

The working of the body and its maintenance in health ; physical attractiveness, vivacity, vigour and poise ; importance of fitting exercise and relaxation to individual needs ; use of leisure time appropriate to daily occupation after leaving school.

In Gymnasium

Removing spectacles during play ; wearing suitable clothing ; cleanliness of clothing ; tidiness in replacing equipment ; moving mats so as not to stir up dust ; care with illumination, temperature and ventilation ; value of co-operation and need for toleration.

At Swimming Bath

Need for thorough bodily cleanliness before entering bath ; care of ears ; danger to others of entering bath with infections, sores, etc. ; need for thorough drying after immersion ; need to avoid overstrain.

On Playing Field

Diet, smoking, etc., and athletic training ; avoidance of excessive physical strain ; care with damaged tendons, cartilages, bruises, cuts, etc.

In Changing Room

Use of showers ; careful placing of discarded clothing ; use of lavatories ; encouragement of healthy attitude to nudity.

BIOLOGY

General

Needs for healthy growth and development of living organisms (nutrition, respiration, etc.), with special reference to humans ; outline of main systems of the human body.

* This is, of course, in addition to what is done in definite health education lessons.

Plant Nutrition

Parts of plants used for human food, *e.g.*, leaf (cabbage), tuber (potato), root (carrot), seed (peas), fruit (apple or orange), petiole (rhubarb) ; nutrition of bacteria and fungi and their contamination of human food.

Animal Nutrition

Requirements for a balanced diet ; special reference to milk as food of young mammals ; relative values of various beverages ; care of teeth ; function of blood as oxygen carrier and need for iron ; how to avoid constipation ; washing of hands before handling food.

Nervous System

Development of nervous system in different species, leading to human capacity for reason, self-restraint, etc. ; effect of caffeine, nicotine, alcohol, etc. ; habit formation ; difference between behaviour of humans and that of other animals ; care of special sense organs (eye, ear, etc.).

The Skin

Care of skin ; use of cosmetics ; types of clothing ; the skin as a barrier to infection ; treatment of minor cuts and abrasions.

Reproduction

Human reproduction and sex ; child development and care ; the human family ; differences in sex behaviour between humans and other animals.

Heredity

Dependence of health on hereditary endowment ; possibility of eugenic improvements ; choice of marriage partner ; importance of providing optimal environment.

Micro-organisms

Microbial diseases—their causes, spread, avoidance and cure ; reference to common diseases of childhood ; in proper places reference to syphilis and gonorrhœa ; natural and artificial immunity ; inoculation ; public health services (*e.g.*, water supply, sewage and refuse disposal) ; quarantine and isolation ; antiseptics.

Insects, etc.

Housefly, bed bug, flea, louse, mosquito, etc., as disease vectors ; scabies mite.

Ecology

Include some human ecology, family life, simple vital statistics, etc.

PHYSICS

Light

Structure and care of eye ; care of spectacles (effect of dust and grease) ; artificial illumination and eye health ; ultraviolet light and bone health ; ultraviolet light lethal to germs ; infra-red light therapy.

Heat

Evaporation and sweating ; heat control of body ; ventilation and clothing ; domestic heating systems; protection against dangers of scalding and burning.

Sound

Structure and care of ear; noise and nervous strain; voice production.

Mechanics

Lever action of bones and muscles ; centre of gravity and bodily equilibrium ; momentum and sense of balance ; gas laws and breathing ; movements of motor vehicles ; action of brakes.

Electricity

Electric nature of nervous message ; radium, X-rays and medical treatment ; electric shock therapy for mental illness.

Chemistry

General

Reference to compounds of health significance (*e.g.*, fats, carbohydrates, proteins, soap) and to simpler drugs, anæsthetics, analgesics, poisons and antidotes.

Air

Oxidation and respiration ; bacterial content ; dust and smoke content ; ventilation.

Water

Sources and safeguarding of health ; mineral elements (calcium, iron, iodine, fluorine, etc.) in water and their bearing on health.

Mathematics

Addition

Examples on family budgets ; dietary calculations ; examination of local authority annual estimates for social services.

Areas and Volumes

Examples on health problems (*e.g.*, amounts of oil to keep down dust in hospital wards of specified dimensions ; amounts of disinfectant to spray cinemas ; room space required in schools, public halls, etc.).

Geometrical Progression

Examples on rate of increase of bacteria, rate of spread of communicable disease, etc.

Averages

Calculate average heights, weights, etc., of people of different ages, income groups, nutrition groups, etc.

Proportion

Examples on comparative health figures for various diseases, birth rates, death rates, etc., over last century in Britain and over different parts of world.

Statistics

Ensuring that all pupils, before leaving school, understand *simple* health indices (*e.g.*, birth rate, death rate, morbidity rate, etc.) which they will read about in newspapers.

Graphs

Utilising figures of heights, weights, accidents, health statistics, etc.

APPENDIX II

HISTORY

Prehistory

Traces of carious teeth and bone diseases in fossil skeletons.

Early Civilisations

Reference to records of disease and attempt at control and cure among early Egyptians, Hebrews, Hittites, etc. (see *Leviticus*, *Code of Hammurabi*, etc.).

Greece

Outline views of Hippocrates, etc. ; the Hellenic appreciation of physical perfection, sun, air, exercise, cleanliness ; ravages of malaria and effect on history (*e.g.*, Athenian plague of Peloponesian Wars) ; comparative lack of consideration towards sick and weakly.

Rome

Great sanitary engineering achievements (*e.g.*, water supplies, sewage, etc.) ; extension of dietary ; hot baths and air-heating of buildings ; epidemics of plague, malaria, etc., and their effect in weakening power of Rome.

Middle Ages

Poor living conditions of many people ; insanitary conditions of towns ; spread of cholera, smallpox, plague (*e.g.*, Great Plague, Black Death) due to failure to isolate cases ; effects on economic and political situation ; animals allowed in houses, transmitting diseases ; nutritional and infectious diseases among the Crusaders ; common dietary (no potatoes, tea, coffee, etc.) ; early provision for sick poor by religious orders, etc. ; effect of dissolution of monasteries ; beginning of Poor Law machinery, precursor of Ministry of Health.

Explorations

Deficient dietary leading to scurvy, etc. ; unhygienic conditions on ships ; spread of diseases (*e.g.*, syphilis to Europe, tuberculosis to various islands) ; extension of European dietary ; effect of alcohol when introduced to American Indians, etc. ; effect of forcing European clothing on natives of Africa, etc.

Industrial Revolution

Heavy mortality, especially of children ; low expectation of life ; lack of sanitation, good food, etc., in crowded towns ; increasing density and concentration of population leading to spread of infection ; smoke pollution ; unrest leading to State health provisions ; effects of window tax on domestic lighting and ventilation ; later regulation of child labour, women's work, factory conditions, etc. ; establishment of infirmaries and hospitals in new industrial towns.

Military Campaigns

Methods of medical treatment available at different historical periods (*e.g.*, Hastings, Crusades, Crimea, World Wars) ; spread of disease by wandering soldiers ; aftermath of wars in malnutrition, epidemics, etc. ; effect of typhus in siege of Granada, wars of Holy Roman Empire, Thirty Years War, Napoleon's campaigns, Soviet Revolution, etc.

Social History

History of clothing, food, home conditions, personal cleanliness, hospitals, medical discoveries, public health services, life expectation, morbidity figures ; effects of famine (*e.g.*, England, 1586 ; Ireland, 1846 ; India, China) ; life and work of health pioneers (*e.g.*, Harvey, Pasteur, Ehrlich, Simpson, Lister) ; rise of State insurance, Friendly Societies, etc. ; legislation on housing, town planning, local government machinery, etc. ; establishment of Ministry of Health, Medical Research Council, World Health Organisation, etc.

Local History

Development of local health services ; history of local health conditions.

Geography

Physical Geography

Effects of different climates on human health ; differing needs for clothing, etc., in different areas.

Human Geography

Attitudes of different societies towards health and illness ; home conditions, diet, clothing, expectation of life, family relations, etc., of peoples of different areas ; reference to India (poor sanitation, malnutrition, over-population, malaria) ; Southern U.S.A. (pellagra in maize-eating areas) ; China (beriberi, old binding of feet, communal towels and trachoma) ; Africa (malnutrition, sleeping sickness, yellow fever) ; Panama Canal (yellow fever) ; Polar regions (comparative sterility of atmosphere) ; special study of living conditions and health in British Isles.

Transport

Inter-dependence of modern countries for food, clothing, etc. ; effects of transport on health (*e.g.*, carriage of disease in ships, leading to institution of quarantine ; disease-bearing insects carried in aeroplanes, as with malaria carried to Brazil) ; refrigeration in food ships.

Industry

Occupational illnesses ; health needs of factory and sedentary workers ; health figures of different parts of Britain and their relation to industrial and social conditions.

Local Geography

Arrangement of local health and welfare services, clinics, wash houses, etc. ; town and country planning.

Religious Instruction

Significance of Mosaic (especially see *Leviticus* and *Numbers*) and other laws of hygiene (*e.g.*, isolation, food hygiene, circumcision) ; reference to various plagues ; explain sexual vocabulary, which many children first meet in Bible reading ; with older pupils explanation of references to fertility cults, discussion of healing miracles, discussion of moral issues of fornication, adultery, etc. ; work of Church in treatment of illness.

APPENDIX II

ART

General

Appreciation of beauty; relation between good health and physical attractiveness; effects of colour and design on mental health; need for good illumination and posture when at art work.

Life Drawing

Postural merits and demerits of model in sitting, standing positions etc.; recognition of bones, muscles, tendons, etc.; æsthetic ideals of Greeks with reference to their statuary.

Design

Best positions for windows, lamps, etc.; avoidance of dust-gathering corners and crevices; arrangement of rooms, etc., in lay-out of houses.

Lettering

Posters in preparation for school medical inspection, for menus for school dinners, referring to school milk, etc.; graphic presentation of health statistics.

Painting

Different types of clothing, hair, dress, shoes, etc., in pictures of different historical periods.

HANDWORK

General

Use of washing facilities; explanation of need to keep dust down; first-aid for cuts, etc.; good motor co-ordination necessary for good handwork; clothing suitable for handwork; care in use of protective devices; care with illumination and posture when working.

Models

Health desiderata in making models of houses, etc.

Woodwork

Making furniture suitable for healthy posture; in general avoiding dust-harbouring excrescences and crevices.

MUSIC

General

Importance of good illumination for reading music scores; recognition of deficiencies in hearing; reference to possible cases of inheritance of musical ability (*e.g.*, Bach); cultivation of sense of rhythmic movement.

Singing

Need for correct posture, diction, breathing, etc.; effect of smoking on throat; good ventilation; discussion of significance of breaking voice at adolescence.

Instrument Playing

Importance of correct posture; need for care not to use another's wind instruments and value of antiseptic covers for mouthpieces; need for short nails for playing string instruments; need for loose clothes; need for good muscular co-ordination.

English

Spelling

Using words of health importance (*e.g.*, immunise, inoculate, vitamin, transfusion).

Grammar

Using some health topics in construction of sentences.

Essays

Using some health topics as subjects for " composition."

Oral Discussion

Discussion of some health topics.

Reading and Writing

Importance of proper illumination and posture.

Literature

Interpretation of references to social, health and family conditions as revealed in novels, plays and poems (*e.g.*, Boccaccio's introduction to *Decameron ;* Chaucer's " humour " theory of personality and attitude to sex ; Shakespeare's frequent reference to infectious disease ; Pepys's many references in *Diary ;* Defoe's *Journal of the Plague Year*, etc. ; Dickens's many references in *Nicholas Nickleby*, *Oliver Twist*, etc. ; Zola in *Dr. Pascal ;* Ibsen in *Ghosts ;* Tolstoy in *Anna Karenina* ; Cronin in *Keys of the Kingdom ;* Mann in *The Magic Mountain*) ; biographies of health workers (*e.g.*, Pasteur, Lister, Koch) ; with older pupils, use of literature as a means of enriching appreciation of emotional significance of sex.

Homecraft

General

Desiderata in home life ; planning of a house ; home budgeting for food, clothing, etc. ; safety in the home ; community services relating to home life.

Cookery

Food values ; preparation of meals to avoid destruction of food elements ; cleanliness in handling food ; refrigeration, tinning, pasteurisation, etc. ; attractive serving of food.

Needlework

Values of different types of material ; importance of loose clothing ; clothes to suit the weather ; care of clothes.

Housecraft

Value of vacuum cleaners in dust reduction ; planning of hygienic houses ; heating, lighting, ventilation ; disposal of garbage.

Child Care

Needs for healthy physical, mental and social maturation ; simple home nursing.

APPENDIX III

LINKAGE OF THEORY AND PRACTICE

SINCE a theoretical knowledge of what is necessary to health is useless unless it is applied in daily living, and since children cannot merely be given the facts and left unaided to work them into their pattern of behaviour, it is necessary for teachers to consider what can be done in the school to link up theory and practice. Some suggestions to this end are made below, but the author recognises that they represent only a fraction of the possibilities and would be glad to receive further suggestions and reports of experiences.

School Environment

Get children to find out for themselves deficiencies in the school buildings and equipment (*e.g.*, lighting, washing and W.C. facilities, ventilation, heating, chairs and desks) and work out together the best ways of meeting these difficulties.

Get children to co-operate in keeping the classroom dust-free, well ventilated, bright and cheerful, etc.

Encourage pupils to suggest ways in which school siting, buildings and equipment could be improved.

School Routine

Study school meal menus over a period (*e.g.*, a month) to consider adequacy of diet.

Discuss health routine in connection with school lunch (*e.g.*, washing hands, washing dropped cutlery).

Relate specific health teaching to current interests (*e.g.*, present cold or "flu" epidemic, this week's school meals, arrangements for immunisation).

Utilise period before school medical and dental inspections for discussions on their purpose, and period after for discussion of their findings.

Health Practices

Study the health practices of the class and relate teaching to the needs exposed by their behaviour (*i.e.*, keep teaching fluid, adapting it to each actual group of children).

Get pupils to list unhygienic habits noticed in school, in bus, in streets, etc., and discuss in class.

Demonstrate and practise correct methods of brushing teeth, hair, etc., and (with older classes) discuss tasteful use of cosmetics ; encourage use of mirrors in cloakrooms.

Encourage clothes appropriate for weather.

Observation and Experiment

Get class to keep records of heights and weights of pupils, and help in their interpretation. (*N.B.*—Do not assume that child "should" be of average height or weight.)

Get children to keep records of their hours of sleep over a period (say, a week) and discuss in class.

Encourage children to examine own teeth with aid of mirror.

Culture bacteria in milk, broth, etc., showing value of boiling and pasteurisation.

Culture bacteria from coughs, sneezes, saliva, unwashed hands, etc.

Expose bacterial cultures to ultraviolet light and observe effects.

Raise vegetables in school garden to give certain food components (*e.g.*, carbohydrates, proteins, minerals, vitamins, roughage).

Individual and Group Activities

Establish wall newspaper on which pupils can place Press cuttings, etc., relevant to health.

Encourage older students to make their own health posters, glossaries, film strips, etc.

Encourage children to make scrap-books (*e.g.*, dress in different climates or different historical periods, different types of housing).

Organise visits to commercial films of health significance (*e.g.*, *Magic Bullet*, *Sister Kenny*, *Louis Pasteur*).

Elementary first-aid and home nursing.

Contact with Home

Make sure that health teaching is in line with practical possibilities in the children's actual home conditions (*e.g.*, do not urge a daily bath to children with no bath in the home).

Enlist parents' co-operation to try to bring home conditions into line with health teaching as far as possible (*e.g.*, with regard to hours of sleep).

Encourage parents to keep children in bed at home if they suspect a cold or other sickness.

Contact with Community

Organise visits to health clinics, garbage and sewage disposal centres, water works, pasteurisation plants, etc.

Have occasional visiting speakers (*e.g.*, doctor, dentist, oculist, health visitor, rat catcher, dustman, pharmaceutical chemist, food distributors and retailers, food inspector, water engineer, school caretaker).

Carry out surveys of local public health and sanitary services.

Discuss with class extracts from local health reports, health committee meetings, etc.

Encouraging Criticism

Get class to collect advertisements for proprietary medicines and discuss them critically.

Discuss " old wives' tales " relating to health.

Read and discuss with class health articles in popular magazines.

APPENDIX IV

USE OF MEDIA FOR A CENTRALLY PLANNED HEALTH EDUCATION CAMPAIGN

THE media available for use in a campaign are many and, properly used, capable of bearing a great load. It may be useful to give a list of possibilities with a few brief notes, as follows :—

NEWSPAPERS, ETC.

(*a*) *Editorials.* Responsible editors will sometimes make editorial references to a *really* important matter. This, however, can be expected only rarely.

(*b*) *Columnists.* Many regular column writers, tactfully approached, will help to give a campaign a good start by making brief reference to its objectives. (*N.B.*—Columnists like *personalities*—the professional people or Civil Servants conducting the campaign must come out of their anonymity and allow themselves to be presented to the public as real, live human beings.)

(*c*) *Feature Articles.* Enlist co-operation of leading physicians, educationists, nurses, etc., in writing relevant feature articles for popular newspapers and magazines. (*N.B.*—While most editors are reasonable people and will often, as a matter of public spirit, accept *well-written* articles of this nature, they will very rightly reject any attempt to dragoon them or to foist on to them amateurish efforts.)

(*d*) *News Releases.* Important to remember that a *fact* is not necessarily *news*—the fact must be tied up with some recent happening (*e.g.*, an interview with a prominent person, the publication of an important report, the launching of a big campaign, the holding of a large meeting). A series of news releases may be generally planned for two or three months ahead, but the *form* of the release must be finally decided only an hour or two in advance, to make sure that the news tie-up is " hot." (*N.B.*—The organisers should always be prepared to alter their planned schedule of releases to take advantage of any current news-worthy events.)

(*e*) *Syndicated Health Columns.* Many small local papers are willing to use a centrally provided column of health material, *provided* that it is written by someone who knows his craft. (*N.B.*—Wide use is made of this form of health education in America.)

(*f*) *Use of Advertising Space.* Very expensive. Sometimes possible to save expense by means of " sponsored " advertisements paid for by commercial firms. (*N.B.*—Danger of seeming to imply that products of sponsors, such as beer or proprietary foods, are necessarily good for health.) Less expensive in local papers than in national " dailies." Need for strong governmental and professional backing for advertisements which might offend the sometimes surprisingly tender susceptibilities of newspaper proprietors. Specially prepared advertisements needed for particular types of reader (*e.g.*, women's journals, illustrateds). (*N.B.*—Why are there so rarely health advertisements in children's magazines ?) Need to employ expert advertisement copy writers, so that amateurish lay-outs are not completely overlooked among commercial advertisements.

Radio

(*a*) *Talks.* Launch campaign by one or two (more time is unlikely to be granted by programme planners) short talks during peak evening listening hours by eminent persons. (*N.B.*—Eminence alone will not compensate for poor broadcasting technique.) Arrange special talks for particular audiences at suitable times (*e.g.*, housewives in early afternoon, children in school hours, factory workers during lunch hour). Arrange talks relating specially to local conditions over regional stations.

(*b*) *News Items.* Make releases of short items relating to progress of campaign at intervals. (*N.B.*—These releases *must* be news-worthy, as in case of newspapers.)

(*c*) *Interviews.* May be arranged either as a special feature, or as part of the various current "magazine" programmes. (*N.B.*—The interview *must* be alive—and the questioner not too "dumb.")

(*d*) *Discussions.* Valuable as part of general health education programme but, in the case of a campaign on a specific topic, care must be taken that conflicting views put forward do not cause confusion instead of encouraging reform of behaviour.

(*e*) *Features.* Try to get one of the regular skilled feature programme writers to present dramatic features relevant to subject of campaign.

(*f*) *Existing Programmes.* It may be possible in many cases to persuade planners of existing programmes (*e.g.*, for women, for schools, for industries, for youth) to give their programmes a special orientation during the campaign.

(*g*) *Mail Follow-up.* Make arrangements with broadcasting authorities for analysis of and replies to listeners' letters. (*N.B.*—A person who takes the trouble to write a letter about a broadcast has *something* in the way of personality and is worthy of attention.)

Projection Material

(*a*) 35-*mm. Films.* Documentary "shorts," health "flashes" and "cartoons" will sometimes be accepted by big circuits and often by independent exhibitors. Main disadvantage is expense.

(*b*) 16-*mm. Films.* For projection by travelling vans, schools, youth clubs, local health authorities, etc.

(*c*) *Film Strips and Slides.* For distribution to the enormous audience of schools, clubs, etc., unable to obtain use of film projector.

Displays

(*a*) *Libraries, etc.* Many public libraries, college libraries, larger bookshops, etc., will co-operate by making a special display of books on a recommended list. It is necessary to distribute the list in good time and desirable to distribute exhibit cards to direct attention to the display.

(*b*) *Posters.* Designed specially for public hoardings, vehicles, clinics, physicians' and dentists' waiting rooms, factories, schools, etc.

(*c*) *Shop Windows.* Many pharmacists, large stores, etc., will gladly make a window display of a well-prepared health education exhibit. Such exhibits must be planned by window-dressing experts so as to be striking, inexpensive and *easily erected.*

(*d*) *Travelling Exhibits.* Railway coaches (to be parked in large stations) and vans (to tour suburbs and rural areas) can be fitted with interesting exhibits on special topics and, where well designed, interest large numbers of people.

(*e*) *Loan Material.* Dioramas, display cabinets, mechanical and electric devices of many sorts, transparencies, silhouettes, physiological specimens, models, etc., can be prepared centrally and lent for specified periods for display in large stores, town halls, public trade exhibitions and fairs, etc. Such material must be light, strong, easily erected and dismantled (virtually foolproof) and accompanied by clear and explicit instructions (or, better, erected and dismantled by centrally trained peripatetic personnel). The value of such exhibits is enormously increased if they are accompanied by skilled demonstrators.

Pamphlets and Leaflets

(*a*) *For Random Public Distribution.* Of doubtful value, since most material broadcast gratis is probably not read carefully.

(*b*) *For Meetings, Exhibitions, Clinics, etc.* Of more value, since recipients already have an initial interest.

(*c*) *For Children.* Probably of value if linked with lessons.

(*d*) *For Enquirers.* Of good value, since those who trouble to write or call for printed material will almost certainly read it with interest.

Lectures

(*a*) *Choice of Lecturers.* Guard against assumption that any physician, nurse or biologist is necessarily suitable as a lecturer. Public speaking is an art and the inspired artists are few.

(*b*) *Planning.* It is most uneconomical to have lecturers dashing all over the country delivering lectures when and where requested by local organisations (although some of this will always be necessary). A travelling team of lecturers spending, say, a week in each of a selected series of towns and giving lectures to general public, doctors, nurses, teachers, youth leaders, youth clubs, school children, adult organisations etc., can be most effective.

(*c*) *Speakers' Notes.* May be prepared centrally and distributed to lecturers, but care must be taken not to straight-jacket speakers or to assume that *anyone* can lecture successfully if supplied with notes.

Miscellaneous

Various devices such as envelope cancellation stamps, "stickies," etc., may be of some value in arousing general interest, but opinions on their value differ widely.

APPENDIX V

ORGANISATION OF A LOCAL "HEALTH WEEK"

DETAILS of organisation must clearly depend upon local conditions, but the following hints may be of some general value :—

A. SEASON

The best season is probably shortly after the summer school holidays, when weather still allows outdoor activities and yet evenings are not too hot for indoor meetings, children can be contacted through their schools, and people returning from their holidays still retain some surplus vigour.

B. DURATION

A "week" of nine days is probably best, starting on a Saturday afternoon and ending on a Sunday evening, thus obtaining the benefit of two week-ends.

C. COST

It is useless to attempt a health week without having a fair sum to spend, but voluntary help will be forthcoming if properly sought. Whatever the sum available, a careful preliminary budget should be opened before any money is spent.

D. PROGRAMME

It is unlikely that in the space of a week many health habits will be transformed or much factual instruction effected. The programme should therefore concentrate on arousing public interest in and affecting public attitudes towards health.

(1) *General Publicity.* Send preliminary notice to local Press three to four weeks before opening ; follow at intervals with small paragraphs about specific items planned ; invite Press representatives to conference immediately before health week opens, at which (say) Lord Mayor, Mayor or Chairman of Council outlines programme (*N.B.*—Spend a few pounds on refreshments !) and give representatives duplicated details of all forthcoming events ; arrange in advance for provision of short daily health article in local Press ; provide daily diary of events ; arrange facilities for reporters and photographers at events of major interest ; if not too expensive, place some advertisements with local papers. (*N.B.*—Expense can be reduced or perhaps eliminated by getting local business houses to donate advertisement space.)

Arrange bill displays on public transport vehicles, trade distributing vans, etc. ; posters on public hoardings, in shop-windows, public libraries, business premises, schools, etc. ; banners across busy streets.

Arrange distribution of handbills through schools, clinics, doctors', dentists' and opticians' waiting rooms, etc.

Arrange display of slides in local cinemas.

If possible, obtain some radio publicity on regional wavelength.

Secure co-operation of doctors, dentists, teachers, health visitors, clergymen, etc., in giving publicity.

(2) *Physical Recreation.* Arrange big afternoon displays of athletics, folk dancing, games, swimming, etc., in public squares, parks and swimming baths by schoolchildren, youth organisations and experts at beginning and end of week.

Arrange sports, games, dancing instruction, swimming lessons, etc., for *public participation* throughout week.

(3) *Indoor Meetings.* Arrange big evening public meetings, with first-rate speakers at beginning and end of week, and a " Health Brains Trust " of well-known experts during the week.

Arrange smaller meetings throughout week in suburbs, for adult organisations, youth clubs, workers, etc. (*N.B.*—Where possible illustrate meetings by films and arrange display and distribution of literature.)

(4) *Outdoor Gatherings.* Arrange short meetings in public squares and parks, using loudspeakers where possible.

If possible, have travelling cinema van giving displays in public squares, etc.

Link up with special visits by mobile blood transfusion and mass radiography units.

(5) *Exhibitions and Displays.* Arrange major exhibition in centrally situated hall.

Arrange minor exhibitions in large stores, pharmacists' shop-windows, shopping arcades, etc.

Arrange displays of health books at libraries.

Try to arrange for local cinemas to include health films in ordinary programmes. (*N.B.*—As a long-term outcome of the health week, try to rearrange public museums so as to have a really attractive health section.)

(6) *Schools.* Arrange short talks by doctors, dentists, nurses, dustmen, sanitary inspectors, sewage workers, food distributors, dairymen, etc.

Get teachers to give a special health " slant " to their work during the whole week.

Organise health competitions for children of different ages.

Secure participation by teachers and children in general physical recreation programme.

E. Organisation

The organising committee's first meeting, two or three months before the health week, should include representatives of the health committee, the education committee, the youth committee, the libraries committee, women's organisations, trade unions, business houses, physical recreation organisations, health education agencies, etc. If the committee is to be a help rather than a hindrance, it should not exceed about twelve in number, meetings should be as few as possible, and each representative should be a *working* member, accepting full responsibility for the organisation of some clearly defined aspect of the programme. Once a budget has been drawn up, each member should be allocated a certain sum for his section of the work and should be allowed to spend it without continually awaiting committee approval. The division of responsibility might be something along the following lines :

(1) *Health Committee Representative.* Organisation of Press, poster, radio and similar publicity ; providing speakers for all meetings, as requested by those planning programmes for particular sections of population ; planning activities for clinics, etc. ; securing co-operation of medical practitioners, dentists, opticians, nurses, sanitary officers, hospital managements, etc. ; acting as treasurer to committee.

(2) *Education Committee Representative.* Organisation of publicity through schools ; planning activities in schools ; securing co-operation of teachers, school nurses, cinema managers, etc. ; enlisting voluntary aid in distribution of leaflets, etc.

(3) *Youth Committee Representative.* Organisation of publicity through juvenile and youth organisations ; planning activities in youth organisations ; enlisting voluntary aid in marshalling outdoor gatherings, etc.

(4) *Libraries Committee Representative.* Organisation of publicity through libraries ; ensuring that public libraries have good supply of relevant books (*N.B.*—Obtain advice of physician and educationist in selection of titles) ; distribution of recommended reading lists ; arranging book displays in central and branch libraries ; provision of special book marks for insertion in books distributed ; arranging travelling book displays for indoor and outdoor meetings ; securing co-operation of private libraries as far as possible.

(5) *Women's Organisations Representative.* Organisation of publicity through women's organisations ; planning activities in women's organisations ; securing co-operation of electricity and gas showrooms in arranging food demonstrations, cleaning displays, etc. ; enlisting voluntary aid in stewarding meetings, exhibitions, etc.

(6) *Trade Unions Representative.* Organisation of publicity through trade union officials, shop stewards, political contacts, etc. ; planning meetings for workers' organisations ; securing co-operation of dustmen, sewage disposal workers, food handlers, etc. ; enlisting voluntary aid in stewarding meetings, exhibitions, etc.

(7) *Business Houses Representative.* Arrangement of publicity through notice boards in business premises, on distribution vans, in shop windows, etc. ; obtaining permission for short talks, film shows, etc., at works, offices and shops ; soliciting offers of space in big stores for exhibitions ; soliciting donation of advertising space.

(8) *Physical Recreation Organisations Representative.* Planning physical recreation displays and activities ; securing co-operation of parks superintendents, athletic and sports organisations, local athletics and sports "heroes," etc. ; providing leaders as requested by those planning programmes for particular sections of population.

(9) *Health Education Agencies Representative.* Planning exhibitions, film displays, loudspeaker vans, etc. ; arranging printing of health week programme and other material for *general* distribution (as distinct from material required by other committee members for their own special purposes) ; acting as general secretary.

F. Follow-up

During week, collect names and addresses of people willing to help at clinics, act as blood donors, attend lecture courses, etc. *Do something about it* quickly before interest wanes.

APPENDIX VI

SEASONAL PLANNING OF A HEALTH EDUCATION PROGRAMME

It is often valuable to introduce a seasonal element into a health education programme, and this Appendix tabulates certain data helpful to this end. Education relating to communicable diseases may be adapted to their seasonal peak incidence ; that relating to diet, to climatic suitability and to cheapness and availability of supplies ; that relating to clothing and domestic hygiene, to the weather ; that relating to exercise and rest and to safety, to the weather and to seasonal occupation. The popular festivals may be utilised for topical health messages, by personal greeting card and in the Press or on the radio, relevant in some way to the festival ; while the anniversaries of the births and deaths of great health pioneers may be used as the occasion for school lessons and general publicity.

This Appendix has, naturally, been prepared with English climatic conditions in mind, but it should be possible to adapt it without difficulty to other geographical regions.

APPENDIX VI. SEASONAL PLANNING

TOPIC \ MONTH	OCT.	NOV.	DEC.	JAN.	FEB.
COMMUNICABLE DISEASES	Polio	Rheumatic diseases	Influenzas and colds Pneumonia		Cerebro Spring
	Ear and mastoid diseases Spray-borne diseases generally				
DIET	More energy foods in colder weather Ensure vitamin supply by cod-liver oil, orange juice, etc. Fresh nuts Milk fairly plentiful		Parsnips plentiful		Cheese needed to for shortage of
	Herring plentiful		Cod and haddock plentiful Avoid excesses during festivities		
CLOTHING	Warmer clothes for colder weather Waterproof clothes and footwear for rain and snow				
DOMESTIC HYGIENE	Keep house well warmed, avoiding inadequate ventilation and stuffiness				
EXERCISE AND REST	Get out of doors in protective clothing despite winter weather Brisk walks, vigorous outdoor games, etc. Develop indoor games, recreations and hobbies		Avoid fatigue during festivities		
SAFETY	Special care on roads with darker mornings and evenings Younger children go straight home from school in darker days Care on pavements and roads with slippery leaves Care on roads during fog		Care on pavements and roads with slippery snow and ice Care during Christmas shopping in busy streets		
	Care when starting frequent domestic fires	Care with fireworks, etc.	Care with naked lights near paper decorations		
	Care when starting winter games, football, hockey, etc.		Care when sliding, skating tobogganning, snowballing, etc.		
FESTIVALS	United Nations Day	Guy Fawkes Day St. Andrew's Day	Christmas Day Quarter Day	New Year's Day	St. Valentine's Day
					Shrove Birthdays of individuals
ANNIVERSARIES	P. Manson b. 3rd, 1844 W. C. Gorgas b. 3rd, 1854	M. Curie b. 7th, 1867	R. Koch b. 11th, 1843 L. Pasteur b. 27th, 1822	E. Jenner d. 26th, 1859 L. Shattuck d. 17th, 1859	E. Klebs b. 6th, 1843 A. Wassermann b. 12th, 1866
TOPIC \ MONTH	OCT.	NOV.	DEC.	JAN.	FEB.

OF A HEALTH EDUCATION PROGRAMME

MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.
-spinal fever colds and epidemics			Typhoid and para-typhoid Poliomyelitis Fly and food-borne diseases generally			
Spring greens becoming plentiful make up milk		Milk very plentiful Eggs plentiful	Lighter diet in warmer weather especially green and fruit salads Fresh soft fruits		Fresh hard fruits Herring plentiful	
Adapt clothing to changeable weather		Gradually cast clothing	Lighter clothing for warmer weather expose body to sun and air, avoiding excessive exposure			Overhaul clothing for new school year
Spring cleaning, but not replacing all-year-round cleanliness			Maximum ventilation in warm weather Special care to protect food and drink from flies			
Better weather allows more time out of doors Day rambles when possible			Maximum time out of doors, in minimum clothing, during hot weather Less vigorous outdoor games, camping, youth hostelling, swimming, etc. See that light evenings do not cause inadequate sleep			See that beginning of school year does not lead to over-tiring
Care on roads with sudden gusts of wind and showers of rain Overhaul cycle in preparation for summer			Play in parks, etc., not on roads, during longer evenings			Reminders of road safety as new school year begins Overhaul cycle brakes and lamps
Care on roads and in countryside during Easter vacation		Care when starting summer games, cricket, etc.	Care on roads and when sunbathing, swimming, boating, picnicking, camping, etc., during summer vacation			
Easter Quarter Day St. David's Day St. Patrick's Day Tuesday throughout the year	St. George's Day All Fool's Day		Midsummer Day Quarter Day			Quarter Day
M. Malpighi b. 10th, 1628 W. Röntgen b. 27th, 1845	W. Harvey b. 1st, 1578 J. Lister b. 5th, 1827	F. Nightingale b. 12th, 1820 E. Jenner b. 17th, 1749	J. Simpson b. 7th, 1811 A. Laveran b. 18th, 1845	G. Mendel b. 22nd, 1822 E. Chadwick d. 23rd, 1904	I. Semmelweiss d. 17th, 1865 P. Ehrlich d. 20th, 1915	W. Reed b. 13th, 1851 R. Ross d. 16th, 1932
MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.

APPENDIX VII

DRAFT SYLLABUS FOR A QUALIFICATION IN HEALTH EDUCATION

In this Appendix are submitted some suggestions indicating what might be regarded as the basic initial study requirements of those who wish to be accepted as specially qualified in health education. Workers previously qualified in medicine, education, sociology or cognate disciplines will already have covered differing sections of the ground here indicated, but few will be equally familiar with all of it.

British Universities might well award a certificate or diploma in health education (as, indeed, many in the U.S.A. now do). There seems little reason, meanwhile, why an early start should not be made in the provision of a course along these lines (ranking as an optional advanced study* for Certificate purposes) for those teachers in training who have a special interest in health education.

Individual Health

The ideal of positive health as something much more than mere absence of patent disease ; the value of periodical health examinations ; the healthy individual as a psychosomatic entity.

Growth and Development

The general concept of maturation as something infinitely more complex than mere accretion ; the characteristic stages of normal physical, mental and social growth and development ; the growth patterns of the main tissues of the body, with particular reference to the central nervous system and the special senses ; the special characteristics and needs of infancy, childhood and adolescence ; biological factors which may facilitate, inhibit or distort development.

The relationship and interaction between body and mind ; the mean physical measurements and developmental attainments of children at different ages, the normal range of variation from these means, and the significance of abnormal deviation ; the characteristics of a wholesome personality, and the detection and significance of minor or temporary deviations from the normal.

The principles of heredity and the main features of sexual intercourse, conception and pre-natal development ; the interplay between hereditary and environmental factors in the determination of the individual's growth and health, with special references to home and school environment.

Basic Health Needs

Human anatomy, physiology, psychology and sociology, studied in sufficient detail to provide the basis for an understanding of the health

* A step in this direction has now been made by the University of London Institute of Education.

needs of the individual ; general principles of health behaviour and their application to different situations ; need for dynamic balance between food intake and utilisation, exercise and rest, security and adventure, work and play, regularity and variety, and privacy and social life ; value of fresh air, sunshine, appropriate clothing, and reasonable degree of cleanliness.

Nutrition

A fuller study of nutrition, as a state depending upon diet, breathing, exercise, rest, etc. ; digestion, assimilation and general metabolism ; essentials of an adequate diet, including the planning of dietaries for home and school, the preparation and serving of food and the special dietary needs of the infant, the adolescent, the mother and different types of worker ; the merits and demerits of common beverages, including tea and alcohol.

Muscular Activity

A fuller study of the physiology of exercise and its influence on health ; the growth of neuromuscular co-ordination and motor efficiency during infancy and childhood ; the bodily skills characteristic of different stages of development, with their significance in terms of the selection of appropriate forms of exercise ; development of fine motor skills in control of eye and hand movements, with its implications in terms of reading, writing, washing, dressing, etc. ; need for appropriate exercise, adapted to daily working routine, in adolescence and adult life.

Cleanliness

A fuller study of the relationship between cleanliness and health, and between cleanliness and æsthetics ; importance of cleanliness of hands, especially after defæcating and before handling food ; cleanliness of general body surface, hair and clothes in relation to skin comfort, skin infections, pediculosis, etc. ; critical evaluation of brushing teeth, combing and brushing hair and grooming clothes ; cleanliness in other personal habits in home, school and public places.

Emotional Health

A fuller study of the components of personality and of the nature of their integration in a healthy personality ; the interaction between instinctive urges and social conditioning ; how desirable character traits may be encouraged and undesirable traits discouraged, while avoiding the establishment of undesirable repressions or neurotic states.

A special study of some selected topic such as the physical development of the individual, *or* the influence of heredity and pre-natal environment on health, *or* the special health needs of a selected age range, *or* the influence of nutrition on health, *or* the factors influencing emotional health, *etc.*

Social Health

The interdependence of the individual and the community ; the main social units of family, school, neighbourhood, nation and world.

The Family

The nature of the family unit in various societies and its functions in our western civilisation ; the home as a factor in the physical, mental

and social development of the child ; the effects of family discords on parents and children ; the conditions of home life in different social groups, with special reference to the effects of family income, family size, housing, type of employment, social customs, etc., on physical and mental health ; modern trends in family life and their implications for the future ; health and safety precautions in the home.

The School

The principles of school design and management from the point of view of health ; regulations and recommendations of the Ministry of Education and other important bodies relating to school health ; the optimum utilisation of good school buildings and equipment and the mitigation of the effects of deficiencies ; the influence of the school curriculum, timetable and routine upon the health of pupils and teachers.

The Neighbourhood

The dependence of the individual upon various community services such as water supply, drainage, sewage, refuse disposal, food inspection, etc. ; the influence of public amenities such as open spaces, playing fields, community centres, youth clubs, nurseries, etc., on the health and well-being of society ; the organisation of local and regional health services ; how parents, teachers, physicians, etc., may co-operate to ensure the most efficient provision and use of community services ; ways in which health attitudes and practices of the neighbourhood and the school influence each other.

The Nation

The history of the popular health, especially since 1800 in Britain ; the dependence of public health upon social and industrial conditions, state of medical knowledge, educational level of the people, etc. ; health considerations in town and country planning.

The present state and administrative machinery of the national health services ; legal requirements as to housing, factory conditions, national insurance, schools and other community buildings, and public health generally ; the work of voluntary organisations existing for the promotion of health.

The interpretation and use of simple vital statistics, especially those commonly used in the reports of government departments and agencies.

The World

A general survey of the health states of different regions of the world, including a comparison of vital statistics where available ; the effects of climate, topography, natural resources and social organisation upon national health.

An outline of the objectives and achievements of international agencies such as the World Health Organisation, the Food and Agriculture Organisation, the U.N. Educational, Scientific and Cultural Organisation, the International Labour Office, the International Red Cross, etc.

A general knowledge of international conventions relating to health and welfare.

A special study of some selected topic such as the health of a particular type of school, *or* the health services of a selected area, *or* the vital

statistics of a selected community, *or* the relationship between health and social class, *or* the international co-ordination of health, *etc.*

Abnormality and Disease

An outline of abnormal and diseased states, studied not from the point of view of pathology, but from that of their diminution and alleviation.

Child Ailments

The common ailments and abnormalities, both physical and mental, of children ; procedures likely to reduce or prevent their onset ; methods of simple home nursing and first aid.

Hereditary and congenital abnormalities, considered in relation to eugenic possibilities ; main causes and methods of reduction of pre-natal, neo-natal and infant mortality.

Common Diseases

The main types of pathogenic organism, with their biological characteristics ; the nature of symbiosis and parasitism, with special reference to human symbionts and parasites ; the methods of spread of communicable diseases, with the ways in which the individual and the community may control this spread ; principles of susceptibility and resistance to infection, immunisation, vaccination, etc. ; the early detection and control of infection in home and school.

The more common nutritional defects and how they may be avoided ; reasons for suspecting such defects and the appropriate actions to take upon such suspicions ; the relation between nutrition and income, social class, general education, specific homecraft training and community dietary traditions.

The occupational diseases of various employments, with the legal requirements and customary precautions relevant to these occupations ; how the risks may be reduced and, where possible, eliminated.

Accidents

Safety hazards, especially of children, studied in relation to variations with age, sex, season and type of neighbourhood ; precautions to be taken by children, parents, teachers and others in home and school and in the streets and the countryside ; the encouragement of safety procedures in the community.

The Handicapped Child

The more common physical, intellectual and emotional handicaps likely to be found among children, studied with reference to the special educational requirements resulting therefrom ; ways in which minor handicaps may be dealt with in ordinary homes, schools and workplaces and greater handicaps dealt with in special classes, schools and institutions ; an outline of the work of special schools, child guidance clinics, speech therapists, teachers of the maladjusted and educationally subnormal, etc. ; how to help the handicapped to live lives as nearly normal as possible.

A special study of a selected topic such as one particular special school, *or* clinic, *or* occupation, *or* type of ailment, *etc.*

Educational Methods

A study of the general methods of education in their application to the special field of health education.

Aspects

The principles involved in the building of patterns of health behaviour; the definition of desirable health assumptions, habits, information, attitudes and ideals, appropriate to individuals at different stages of development ; methods by which these desiderata may be achieved ; the dependence of the effectiveness of educational methods upon home and other social conditions.

Media

The relative efficacies of various media in health education ; the most efficient ways of employing the spoken word, posters, charts, pamphlets, periodicals, Press advertisement, films and other visual aids, radio, exhibition, etc. ; ways in which the home routine and the school routine and curriculum may be utilised as media of health education, including a more detailed consideration of habit training in the home and of incidental health education in the school.

Evaluation

An appreciation of the value of individual records and group assessments ; methods of evaluating the health status, knowledge, attitudes and behaviour of small social groups such as school classes and youth clubs ; an outline of the " sampling " techniques of estimating public opinion, attitude and knowledge on health matters, with an outline of the results so far available.

Organisation

Methods of planning and execution of health and health education programmes for schools, youth organisations, local communities and nation-wide campaigns ; services offered by official and voluntary health education agencies and how these services may best be utilised.

A special study of some selected topic such as the health education of a particular age-range, *or* the use of particular educational media, *or* the validity of particular means of evaluation, *or* the planning of health education for a particular section or type of community, *etc.*

APPENDIX VIII

DIRECTORY OF HEALTH EDUCATION ORGANISATIONS

THERE are many organisations from which material and advice of value in health education may be obtained, and here follows a list of the most important of those known to the author. Governmental departments have been listed in detail only for those countries in which they are largely responsible for health education. This directory has been compiled (apart from those organisations, mainly in English-speaking countries, with which the author has had direct communication) from information supplied in part by Embassies and High Commissioner's Offices, in part by International and British health and education organisations, and in part by individual informants in various countries. To those who have thus helped, and to readers who may be good enough to send corrections or further information for inclusion in later editions, sincere thanks are given.

Details of the help available may be obtained from the addresses given, and ranges from information on specific topics to a complete health education service. The sources are classified under the following heads :—

A. Africa.
B. America.
C. Asia.
D. Australasia.
E. Europe.
F. International.

A. Africa

Egypt
Egyptian Association for Mental Health, c/o Department of Mental Diseases, Abbassia, Cairo.
Ministry of Social Affairs, Cairo.
Physical Education Department, Sharia Maarad, Gezira, Cairo.

Southern Rhodesia
Department of Public Health, P.O. Box 587, Salisbury.
St. John Ambulance Brigade, P.O. Box 536, Salisbury.
Southern Rhodesian Red Cross Society, P.O. Box 1406, Salisbury.

Union of South Africa
Afrikaanse Christelike Vroue Vereniging-Hoofkantoor, Kamer 928, Grootekerk-gebou, Kaapstad.
Marriage Guidance Society, Johannesburg.
National Advisory Council on Physical Education, New Standard Bank Buildings, Pretoria.
St. John Ambulance Association, 8 Box Street, Braamfontein, Johannesburg.
Secretary for Education, Arts and Science, New Standard Bank Buildings, Pretoria.
Secretary for Health (Division of Nutrition and Health Education), Union Buildings, P.O. Box 386, Pretoria.
Secretary for Social Welfare, Pretoria.
South African Council for Maternal and Family Welfare, Bizana, Plumstead.
South African Council for Mental Hygiene, 426–27 Kruis Street, Johannesburg.
South African National Tuberculosis Association, 51–52 Club Arcade, Smith Street, Durban.
South African Nursery School Association, P.O. Box 763, Pretoria.
South African Red Cross Society, His Majesty's Buildings, Eloff Street, P.O. Box 8726, Johannesburg.
Suid-Afrikaanse Noodhulpliga, 6 Federated House, cor. Loveday and De Villiers Streets, P.O. Box 1074, Johannesburg.
Suid-Afrikaanse Vroue Federasie Hoofkantoor, Skinnerstraat 345, Pretoria.

B. America

Argentine
Asociación Argentina de Higiene y Medicina Social, Museo Social Argentino, Buenos Aires.
Asociación de Biotipologia, Eugenesia y Medicina Social Alsina 1027, Buenos Aires.
General Directorate of Physical Education, Las Haras 2545, Buenos Aires.
Liga Argentina contra la Tuberculosis, Santa Fé 4292, Buenos Aires.
Liga Argentina de Higiene Mental, Calle Lima 430, Buenos Aires.

Bermuda
Bermuda Tuberculosis Association, Hamilton.
Department of Education, Hamilton.

Bolivia
Comite Nacional de Deportes, La Paz.

Brazil
Confederacao Brasiliera de Desporto, Rio de Janeiro.
Instituto de Higiene, Caixa Postal 26, Belo Horizonte.
Liga Brasiliera de Higiene Mental, Edificio Odeon, 6 Andar, Salas 610–611, Rio de Janeiro.
Ministry of Education and Health, Rio de Janeiro.
Serviço National de Lepra, Rio de Janeiro.
Sociedade Brasiliera de Tuberculosis, Rio de Janeiro.

Canada
Birth Control Society of Hamilton, 347 Queen Street South, Hamilton, Ont.
Canadian Association for Health, Physical Education and Recreation, 475 Pine Avenue West, Montreal, Que.
Canadian Cancer Society, 280 Bloor Street West, Toronto, Ont.
Canadian Dental Association, 211 Huron Street, Toronto, Ont.
Canadian Dietetic Association, 27 Alhambra Avenue, Toronto, Ont.
Canadian Hospital Council, 280 Bloor Street West, Toronto, Ont.
Canadian Life Insurance Officers' Association, 302 Bay Street, Toronto, Ont.
Canadian National Institute for the Blind, 186 Beverley Street, Toronto, Ont.
Canadian Nurses' Association, 1411 Crescent Street, Montreal, Que.
Canadian Public Health Association, 150 College Street, Toronto, Ont.
Canadian Red Cross Society, 95 Wellesley Street, Toronto, Ont.
Canadian Tuberculosis Association, 265 Elgin Street, Ottawa, Ont.
Canadian Welfare Council, Council House, Ottawa, Ont.
Health League of Canada, 111 Avenue Road (or 150 College Street), Toronto, Ont.
Industrial Accidents Prevention Association, Inc., 600 Bay Street, Toronto, Ont.
Ligue Canadienne de Santé, 914 Edifice Sun Life, Montreal, Que.
National Committee for Mental Hygiene, 111 St. George Street, Toronto, Ont.
National Committee for School Health Research, 206 Huron Street, Toronto, Ont.
National Council on Physical Fitness, Room 704, Jackson Building, Ottawa, Ont.
Ontario Society for Crippled Children, Inc., 112 College Street, Toronto, Ont.
St. John Ambulance Association, 321 Chapel Street, Ottawa, Ont.
and the Federal and Provincial Departments of Health, Welfare, Education, Social Services, etc.

Chile
Asociación Chilena Pro Salud Mental, Casilla 6507, Santiago.
Direccion General de Informaciones y Cultura, Studio National, Santiago.

Columbia
Departamento Nacional de Salubridad, Bogotá.
Instituto Nacional de Higiene, Calle 57, No. 8–35, Bogotá.

Cuba
Consejo Nacional de Tuberculosis, Avda Columbia y 8a, Marinao, Habana.
Liga Contra el Cáncer, Habana.
Liga Cubana de Higiene Mental, Malecón 61, Apartado 2589, Habana.

Jamaica
Jamaican Family Planning League, Fort George, Stoney Hill, Jamaica.

Mexico
Escuela de Salubridad e Higiene, Mexico City.
Liga Mexicana de Higiene Mental, Gomez Farias 56, Mexico City.
Sociedad Mexicana Estudios Psico-Pedagógicos, Nayarit 86, Mexico City.
Sociedad Mexicana de Eugenesia, Mexico City.

Peru
Associación Nacional de Higienistas, Apartado 1118, Lima.
Comite Nacional de Deportes, Stadiun Nacional, Lima.
Liga Nacional de Higiene y Profilaxia Social, Apartado 2563, Lima.
Liga Peruana de Higiene Mental, Apartado 522, Lima.
Ministerio de Education, Lima.
Sociedad Peruana de Eugenesia, Apartado 2563, Lima.

Philippines
Philippine Amateur Athletic Association, Rizal Memorial Field, Manila.

United States of America

American Association for Health, Physical Education and Recreation, 1201 Sixteenth Street, N.W., Washington, D.C.
American Cancer Society, 47 Beaver Street, New York, N.Y.
American Dental Association, 212 East Superior Street, Chicago, Ill.
American Dietetics Association, 185 North Wabash Avenue, Chicago, Ill.
American Eugenics Society, 1790 Broadway, New York, N.Y.
American Heart Association, 1790 Broadway, New York, N.Y.
American Home Economics Association, 617 Mills Buildings, Washington, D.C.
American Institute of Family Relations, 607 South Hill Street, Los Angeles, Calif.
American Medical Association, 535 North Dearborn Street, Chicago, Ill.
American National Red Cross, 17th and D Streets N.W., Washington, D.C.
American Public Health Association, 1790 Broadway, New York, N.Y.
American School Health Association, State University, Kent, Ohio.
American Social Hygiene Association, 1790 Broadway, New York, N.Y.
(Catholic) Family Life Bureau, 1312 Massachusetts Avenue N.W., Washington, D.C.
Child Study Association of America, 221 West 57th Street, New York, N.Y.
Cleanliness Institute, 381 Fourth Avenue, New York, N.Y.
Cleveland Health Museum, 8911 Euclid Avenue, Cleveland, Ohio.
Elizabeth McCormick Memorial Fund, 848 North Dearborn Street, Chicago, Ill.
Group Health Federation of America, 1790 Broadway, New York, N.Y.
Health Publications Institute, 216 North Dawson Street, Raleigh, N.C.
Industrial Foundation of America, 4400 Fifth Avenue, Pittsburgh, Pa.
(Jewish) Institute on Marriage and the Family, 40 West 68th Street, New York, N.Y.
John Hancock Mutual Life Insurance Co., Boston, Mass.
Margaret Sanger Bureau, 17 West 16th Street, New York, N.Y.
Maternity Center Association, 654 Madison Avenue, New York, N.Y.
Metropolitan Life Insurance Company, 1 Madison Avenue, New York, N.Y.
National Child Welfare Association, 70 Fifth Avenue, New York, N.Y.
National Committee for Mental Hygiene, 1790 Broadway, New York, N.Y.
National Conference on Family Relations, 1126 East 59th Street, Chicago, Ill.
National Dairy Council, 111 North Canal Street, Chicago, Ill.
National Education Association, 1201 Sixteenth Street N.W., Washington, D.C.
National Foundation for Infantile Paralysis, 120 Broadway, New York, N.Y.
National Health Council, 1790 Broadway, New York, N.Y.
National Mental Health Foundation, 1520 Race Street, Philadelphia, Pa.
National Recreation Association, 314 Fourth Avenue, New York, N.Y.
National Safety Council, 20 North Wacker Drive, Chicago, Ill.
National Tuberculosis Association, 1790 Broadway, New York, N.Y.
Planned Parenthood Federation of America, 501 Madison Avenue, New York, N.Y.
(Protestant) Commission on Marriage and the Home, 297 Fourth Avenue, New York, N.Y.
and the Federal, State and University Health Departments, Education Departments, Welfare Departments, etc.

Uruguay

Comision Nacional de Educacion Fisica, J. M. Blanes 100–Ap. 2, Monte Video.
Liga Nacional Uruguaya de Higiene Mental, Larranaga 4516, Monte Video.

Venezuela

Liga Venezolana de Higiene Mental, Puente de Hierro a Cuartel de la Planta, Caracas

C. Asia

Burma

Burma Health and Physical Education Association, Education Office, Rangoon.

Ceylon
Ceylon Amateur Sports Federation, 24 Guildford Crescent, Colombo.
Ceylon National Association for the Prevention of Tuberculosis, 12 Adams Avenue, Colombo.
Red Cross Society, Colombo.

China
Health Education Association of China, c/o Medical College, Chinkiang.
Mental Hygiene Association of China, c/o Futan University, Shanghai.

India
All-Indian Institute of Hygiene and Public Health, 110 Chittaranjan Avenue, Calcutta.
Association for Moral and Social Hygiene, 20 Talkatora Road, New Delhi.
Bureau of Health Education, Dept. of Public Health, Sashradi Road, Bangalore.
Council of Physical Culture, Lucknow.
Director of Social Hygiene and Health Education, Writers' Buildings, Calcutta.
Family Planning Association (India), Bombay.
Indian Council for Mental Hygiene, Cumbutta Chambers, 42 Queen's Road, Bombay.
Indian Red Cross Society, 20 Talkatora Road, New Delhi.
Mission to Lepers, 44 Cantonments, Fyzabad, U.P.
Nutrition Officer, Government of Bombay, Haffkine Institute, Parel, Bombay.
Propaganda Section, Public Health Department, Marzban Road, Bombay 1.
Public Health Commissioner, Government of India, New Delhi.
Tuberculosis Association of India, 20 Talkatora Road, New Delhi.
and the various Provincial offices and branches of the departments and organisations.

Iran
Iranian National Physical Education Association, Teheran.

Iraq
Physical Education Department, Ministry of Education, Baghdad.

Israel
Health Section, Vaad Leumi Hadaasah Medical Organisation, Tel Aviv.
Physical Training Department, Vaad Leumi, 65 Allenby Street, Tel Aviv.

Japan
Japanese Birth Control Institute, 12 Shinryudocho, Azabu, Minatoku, Tokio.

Malaya
Department of Education, Singapore, Malaya.
Malayan Association for the Prevention of Tuberculosis, P.O. Box, 484 K.L., Kuala Lumpur.

Pakistan
All-Pakistan Medical Association, Dacca.
Director-General, Health Services of Pakistan, Karachi.
Pakistan Tuberculosis Association, Karachi.
Red Cross Society, Karachi.
and the various Provincial Directors of Public Health, Inspectors-General of Hospitals, Medical Associations and Red Cross Societies in Dacca (East Bengal), Karachi (Sind), Lahore (West Punjab), and Peshawar (N.W. Frontier Province).

Singapore
Family Planning Association, c/o Medical Officer, Municipal Office, Singapore.

Syria
Board of Physical Education, Ministry of Education, Damascus.

Turkey
Beden Eğitimi Yüksek Enstitüsü, Ankara (*Physical Education*).
Beden Terbiyesi Genel Müdürlüğü, Milli Eğitim Bakanlığı, Ankara (*Physical Education*).
Çocuk Esirgeme Kurumu Genel Merkezi, Ankara (*Child Welfare*).
Ministère de l'Instruction Publique, Necatibey Caddesi, Ankara.
Refik Saydam Merkez Hıfzıssıhha Enstitüsü, Ankara (*Hygiene*).
Turkish Society for Mental Hygiene, Ankara Caddesi 15, Istanbul.

D. Australasia

Australia (including Tasmania)
Anti-Tuberculosis Association of New South Wales, 33 Macquarie Place, Sydney, N.S.W.
Australian Tuberculosis Association, 188 North Terrace, Adelaide, S.A.
Commonwealth National Fitness Council, Department of Health, Canberra, A.C.T.
Health Department, Davey Street, Hobart, Tas.
Health Department, 52 Bridge Street, Sydney, N.S.W.
Health and Home Affairs Department, William Street, Brisbane, Q'ld.
Health Week Council, 16 Barrack Street, Sydney, N.S.W.
National Fitness Council, Bent and Macquarie Streets, Sydney, N.S.W.
and Berco Building, North Terrace, Adelaide, S.A.
and 53 Russell Street, Melbourne, Vic.
and Government House, Perth, W.A.
New South Wales Society for Crippled Children, 9 Bligh Street, Sydney, N.S.W.
Public Health Department, 57 Murray Street, Perth, W.A.
Racial Hygiene Association of New South Wales, 14 Martin Place, Sydney, N.S.W.
Roberts Health Academy, 113 Grenfell Street, Adelaide, S.A.
Royal Society for the Welfare of Mothers and Babies, Bridge Street, Sydney, N.S.W.
and the Commonwealth and State Departments of Education, Health, Home Affairs, etc.

New Zealand
Department of External Affairs, Wellington.
Education Department, Wellington.
Family Planning Association of New Zealand, Box 2051, Auckland.
Health Department, State Fire Building, Lambton Quay, Wellington.
New Zealand Council for Mental Health, Ashburn Hall, Dunedin.
New Zealand Federation of Tuberculosis Associations (Inc.), 218 D.I.C. Building, Wellington.
Physical Recreation and Welfare Branch, Department of Internal Affairs, P.O. Box 7, Government Buildings, Wellington.
Red Cross Society (Inc.) of New Zealand, 61 Dixon Street, Wellington.
St. John Ambulance Association, 29 Vivian Street, Wellington.
The Plunket Society, George Street, Dunedin.

E. Europe

Austria
Osterreichische Gesellschaft für Psychische Hygiene, Lazarettgasse 14, Wien 9.
Osterreichische Sportleh. Reverband, Fuhrmannsg, 18a, 111 st., Wien, 8.

Belgium
Comité National D' Education Physique et Comité Olympic Belge, Rue Guimard 14, Bruxelles 4.
Hélios.
Institut Pasteur de Bruxelles, 28 rue du Remorqueur, Bruxelles.

Ligue Nationale Belge d'Hygiene Mentale, Chaussée de Vleurgat 98, Bruxelles.
National Belgisch Werk Tot Bestrijding Der Tuberculose, Eendrachstraat 56, Bruxelles.

Czechoslovakia

Czechoslovak Mental Health Society, Legerova 8, Praha 12.
Health Education Offices, Ministry of Health, Snemovni 4, Praha 3.
Masaryk Amtitto League, Stefanikova namesti 2, Praha 3.
Ministry of Education, Budecska 6, Praha 12.

Denmark

Den alm. danske Lægeforening, Kristianiagade 12, Kobenhavn, ø.
Landsforeningen for Mentalhygiejne, Bredgade 45A, Kobenhavn, K.
Mødrehjælpen, Sortedamsdosseringen 81, Kobenhavn, ø.
Overinspektøren for Børneforsorgen, Rosenvængets Alle 18, Kobenhavn, ø.
Selskabet for Sundhedsplejen, Blegdamsvej 21, Kobenhavn, ø.
Socialministeriet, Slotsholmsgade 6, Kobenhavn, K.
Socialpædagogisk Forening, Frederiksberg Alle 34, Kobenhavn, V.
Sundhedsstyrelsen, Slotsholmsgade 10, Kobenhavn, K.

Finland

Ammattilääketieteellinen tuthimussäätiö r.y.—Stifelsen för yrhesmedicinsk forskning r.f., Snellmaninkatu 14, Helsinki (Occupational diseases).
Ensikotien Liitto, Salmintie 8, Helsinki (Unmarried mothers).
Finnish League for Mental Hygiene, Arkadia 31, Helsinki.
Hermo- ja mielitautien vastustamisykdistys r.y., Korkea-vuorenkatu 15A, Helsinki (Nervous and mental diseases).
Kenraali Mannerheimin Lastensnojeluliitto, Annankatu 16, Helsinki (Maternity and nursery work).
Nuorten Ystävät r.y., Oulu (Children's homes).
Pelastakaa Lapset r.y., Annankatu 16, Helsinki (Homeless children).
Sukupuolitantien Vastustamisyhdistys r.y.—Föreningen för Könssjukdomarras Bekämpardo r.f., Humalistonkatu 1.B.33, Helsinki (Venereal diseases).
Suomen huonokuuloisten huoltoliitto, Kasarminkatu 25C, Helsinki (Partially deaf).
Suomen Purainen Risti—Finlands Röda Kors, Tehtaankatu 1, Helsinki (Red Cross).
Suomen Syö päyhdistys—Cancer fören ingen i Finland r.y., Unioninkatu 38, Helsinki (Cancer).
Suomen Teollisuuslääketieteallinen yhdistys—Finlands industri-medicinska förening, Snellmaninkatu 14, Helsinki (Industrial medicine).
Suomen Tuberkuloosin Vastustamisyphdistys—Föreningen för Tuberkulosens Bekämpardo i Finland r.y., Yrjönkatu 13, Helsinki (Tuberculosis).
Tuberkuloosiliitto r.y.—Tuberkulosförbundet r.f., P. Esplanaadikatu 25B, Helsinki (Tuberculosis).

France

Association Française pour l'Etude du Cancer, 12 rue de l'Ecole de Medicine, Paris 9.
Centre National d'Education Sanitaire, Ministere de la Santé Publique, 7 rue de Tilsett, Paris.
Comité National de Défense contre la Tuberculose, 66 boulevard Saint Michel, Paris 5.
Direction Generale D'Education Physique, Paris.
Institut de Biologia Sociale et d'Hygiène Mentale, 1 rue Cabanis, Paris 14.
Institut National d'Etudes Démographiques, 20 rue de la Baume, Paris 8.
Institut Pasteur, 25–28 rue du Dr. Roux, Paris 15.
Ligue d'Hygiène Mentale, 1 rue Cabanis, Paris 14.

Sauvane les Mères et les Betos, 24 rue de Saint Victor, Paris.
Société d'Hygiène Publique et Sociale, 30 avenue Reille, Paris 14.
Union Nationale des Associations Familials, 28 place Saint Georges, Paris, 9.

Germany

Arbeitsgemeinschaft für Jugend- und Eheberatung, Detmold-Heiligenkirchen 126 (can provide more detailed information about German organisations).
Arbeitsgemeinschaft für Jugendpflege und Jugendfürsorge, Köln-Müngersdorf, Sporthochschule.
Centrale des Katholischen Fürsorgevereins für Mädchen, Frauen und Kinder, Dortmund, Schulgasse 5.
Deutsche Gesellschaft zur Bekämpfung der Geschlechtskrank-Leiten, Kiel.
Deutsche Hauptstelle gegen Suchtgefahren, Büren (Westfalen), Im Kuhling 3.
Deutsche Vereinigung für Gesundheits fürsorge im Kindesalter, Göttingen, Universitäs-Kinder-Klinik.
Deutscher Sittlichkeitsverein und Rettungsverein, Erkner bei Berlin, Alte Hausstelle.
Deutscher Verein für öffentliche Gesundheitspflege und Gesundheitspolitik, Frankfurt/m., Brockenheimer Anlagen 45.
Deutscher Verein für öffentliche und private Fürsorge, Frankfurt/m. Süd, Schaumairkai 35.
Deutsches Gesundheitsmuseum e.V., Köln, Fürst-Pücklerster, 82.
Evangelische Arbeitsgemeinschaft zur Bekämpfung der Alkoholnot, Hannover, Ebhardstr. 3a.
Haupt beratungsstelle für Suchtkranke, Berlin-Dahlem, Habelschwerdter Allee 16.
Kathol. Arbeitsgemeinschaft für Volksgesundheit, Freiburg, Werthmana haus.
'Reines Leben' Arbeitsgemeinschaft evang. Frauen und Mädchen, Berlin: Freidenau, Peter-Vischer-Str. 3 *and* Schladen/Harz, Schulstr, 4.
Verbard dentscher Leibeserzieher, Köln-Lindenthal, Rückerstr. 26.
Vereinigung Evang. Kinderpflege verbände Deutschlands e.V., Berlin-Dahlem, Reichensteiner Weg 24 *and* Stuttgart, W. Reinsburgstr. 46.
Weisses Kreuz. Bund für sittliche Reinheit, Berlin-Charlottenburg, Leonhardstr, 21 *and* Hannover, Rambergstr. 13.
Zentrale für Jugendschutz und Elternhilfe, Berlin-Lichterfelde, Mittelstr. 9.
and the various Stadt and Land health and education services.

Great Britain

Alliance, 112 City Road, London, E.C.1.
Association of Optical Practitioners, 65 Brook Street, London, W.1.
British Empire Cancer Campaign, 11 Grosvenor Crescent, London, S.W.1.
British Rheumatic Association, 5 Tite Street, London, S.W.3.
British Social Hygiene Council, Tavistock House, Tavistock Square, London, W.C.1.
Catholic Marriage Advisory Council, 38–39 Parliament Street, London, S.W.1.
Central Council for Health Education, Tavistock House, Tavistock Square, London, W.C.1.
Central Council for Physical Recreation, 58 Victoria Street, London, S.W.1.
Church of England Moral Welfare Council, Church House, Dean's Yard, London, S.W.1.
Dental Board of the United Kingdom, 44 Hallam Street, London, W.1.
Eugenics Society, 69 Eccleston Square, London, S.W.1.
Family Planning Association, 64 Sloane Street, London, S.W.1.
Family Welfare Association, 296 Vauxhall Bridge Road, London, S.W.1.
Foot Health Education Bureau, 90 Ebury Street, London, S.W.1.
Food Education Society, 29 Gordon Square, London, W.C.1.
Home and School Council of Great Britain, 109 Fulham Palace Road, London, W.6.
Housing Centre, 13 Suffolk Street, London, S.W.1.
Institute of Child Psychology, 6 Pembridge Villas, London, W.11.
Institute of Medical Psychology, 2 Beaumont Street, London, W.1.

Institute for the Scientific Treatment of Delinquency, 8 Bourdon Street, London, W.1.
Ling Physical Education Association, Hamilton House, Bidborough Street, London, W.C.1.
Medical Research Council, 38 Old Queen Street, London, S.W.1.
National Association for Maternity and Child Welfare, 5 Tavistock Place, London, W.C.1.
National Association for Mental Health, 39 Queen Anne Street, London, W.1.
National Association for the Prevention of Tuberculosis, Tavistock House, Tavistock Square, London, W.C.1.
National Baby Welfare Council, 29 Gordon Square, London, W.C.1.
National Council of Social Service, 26 Bedford Square, London, W.C.1.
National Institute for the Blind, 224 Great Portland Street, London, W.1.
National Marriage Guidance Council, 78 Duke Street, London, W.1.
National Ophthalmic Treatment Board Association, Tavistock House, Tavistock Square, London, W.C.1.
National Smoke Abatement Society, Chandos House, Buckingham Gate, London, S.W.1.
National Trust for the Promotion and Study of Health, 8F Hyde Park Mansions, London, N.W.1.
Noise Abatement League, 105 Gower Street, London, W.C.1.
Nursery School Association of Great Britain, 1 Park Crescent, London, W.1.
Royal Institute of Public Health and Hygiene, 28 Portland Place, London, W.1.
Royal Society for the Prevention of Accidents, 52 Grosvenor Gardens, London, S.W.1.
Scottish Association for Mental Hygiene, City Social Service Dept., Castle Terrace, Edinburgh, 1.
Scottish Council for Health Education, 3 Castle Street, Edinburgh.
Scottish Council of Social Service, 10 Alva Street, Edinburgh, 2.
Scottish Marriage Guidance Council, 44 Queen Street, Edinburgh.
Society for Sex Education and Guidance, 92 Harley Street, London, W.1.
Town and Country Planning Association, 28 King Street, London, W.C.2.
and the Ministries of Health and Education, the Home Office, etc.

Hungary
Hungarian Society for Child Study, Gyulai Pál utca 7, Budapest 8.
Ministry of Social Affairs, Kossuthter 11, Budapest.

Iceland
Fraedslumalaskrijstofan, Reykjavik.

Ireland
Department of Education, Marlborough Street, Dublin.
Department of Health, Custom House, Dublin.
Irish Red Cross Society, 25 Westland Row, Dublin.
Medical Association of Eire, 95 Merrion Square, Dublin.

Italy
Alto Commissario per l'Igiene la sanita Pubblica, Roma.
E.N.A.L., Via Della Stelletta 23, Roma.
Federazione Italiana Contro la Tuberculosi, Via Nazionale 200, Roma.
Instituto di Educazione Famigliale, Via Nicola Fabrizi 5, Torino.
Lega Italiana d'Igiene Mentale, Via Guastalla 3, Milano.
Opera Nazionale per la Protezionz della Maternita e dell Infanzia, Lungotevere Ripa 1, Roma.

Luxembourg
Ministere de l'Education Physique et des Sports, 57 Boulevard de Stalingrad, Luxembourg.

Netherlands
Information Office of the Food Council, Koninginnegracht 42, The Hague.
Institute for Preventive Medicine, Wassenaarse Weg 56, Leyden.

Ministerie Van Onderwijs, Kunsten en Wetenschappen, Emantsstraat 23–25, The Hague.
Ministry of Education (Physical Education Department), Prinsengracht 21, The Hague.
Ministry for Social Affairs (Department for International Health Affairs), Zeestraat 73, The Hague.
Nationale Federatie voor de Geestelijke Volkgezondheid, Prinsengracht 717, Amsterdam (*Mental Health*).
Nationale Het Wit-Gele Kruis Central Bureau, Voorstraat 63–65, Utrecht (*White-Yellow Cross*).
Nederlandsche Centrale Vereeniging Tot Bestrijding Der Tuberculose, Riouwstraat 7, The Hague.
Nederlandsche Vereeniging voor sexuele Hervorming, Jan v. Nassaustraat 1, The Hague.
Netherlands Association for the Protection of Infants and for the Promotion of Prenatal Welfare, Neuhuyskade 50, The Hague.
Netherlands Green Cross Society, Nieuwe Gracht 69a, Utrecht.
Netherlands Society for Moral Health, Mathenesselaan 263, Rotterdam.
Orange-Green Cross Society, Koningin Emma Kade 197, The Hague.
Stichting voor Lichamelijke Opvoeding, Sport en Spel in Het Jeudgwerk, Eikbosscherweg 193, Hilversum.

Norway
Gymnastikkonsulenten, Kronprinsensgaten 6, Oslo.
Nasjanalforeningen Mot Tuberkulose for Folkehelson, Incognitogaten 1, Oslo.
Norwegian National Association for Mental Health, Helsedirektoratet, Oslo.

Poland
Glwnyurzad Kultury Fizycznej, Ul. Marszalkowska N. 158, Warszawa.
Polski Towarzystwo Higieny Psychicznei, Dolna Str. 42, Warszawa.
Polski Zwiazek Przciwgruzliczy, Karowa 31, Warszawa.
State Institute of Hygiene, Chocimska 24, Warszawa.

Portugal
Direccao General Educacao Fisica & Desportos, Lisbon.

Rumania
Institute of Hygiene, Str. Pasteur 6, Cluj.
L'Organisation Sportive Populaire, Rue Belvedere 6, Bucarest.

Sweden
Hemmens Forskningsinstitut, Hantverkaregatan 3, Stockholm.
Kungl. Gymnastika Centralinstitutet, Lidingövägen 1, Stockholm.
Kungl. Medicinalstyrelsen, Vallingatan 2, Stockholm.
Kungl. Socialstyrelsen, Birger Jarls torg 2, Stockholm.
Rikförbundet för Sexuell Upplysning, Kungsgatan 37, Stockholm.
Statens Institut för Folkhälsan, Norrbackdomradet, Tomteboda, Stockholm.
Statens Psykologisk-Pedagogiska Institut, Riddargatan 5, Stockholm.
Svenska Föreningen för Psykisk Hälsovärd, Bergsgatan 16, Stockholm.
Svenska Nationalföreningen mot Tuberkulos, V. Trädgordsgatan 11B, Stockholm.
Svenska Röda Korset, Artllerigatan 6, Stockholm.
Sveriges Riksidrottsförbund, Strömsborg, Stockholm.

Switzerland
Comité Suisse de Protection Familiale, Brandschenkestrasse 36, Zurich.
Comité National Suisse de l'Hygiène Mentale, Monthey/Valais.
Ecole Federale de Gymnastique et de Sport, Magglingen/Macolin.
Federation Suisse Pro Familia, Gutenbergstrasse, Zurich.
Service Fédéral de l'Hygiène Publique, Bollwerk 27, Berne.
Swiss National Association of Physical Education, Haldenstrasse 20, Zurich.

Union of Soviet Socialist Republics

Academy of Medical Sciences of the U.S.S.R., Moscow.
All Union Committee of Physical Culture and Sport, 7 Skatertny Pereulok, Moscow.
Central Institute for the Protection of Motherhood and Infancy, Moscow.
Institute of School Hygiene, Moscow.
Institute for the Study of Children with Physical Defects, Pogodinskaya 8, Moscow.
Institute of Teaching Methods, Lobkovsky per 5/16, Moscow.
Museum for the Protection of Mother and Child, Kropotkinskaya Ul. 20, Moscow.
Russian Academy of Pedagogical Sciences, Mokhovaya 6, Moscow.
State Central Institute of Physical Culture of the Order of Lenin, Ul. Kazakova 18, Moscow.
State Pedagogical Institute, M. Pirogovskaya 1, Moscow.

Yugoslavia

Federal Institute of Hygiene, Bul. Jugoslovenske Armije 16, Belgrad.
Fiskulturni Savez Jugoslavije, Centralni Odbor, Belgrad.

F. International.

International Committee on Planned Parenthood, 69 Eccleston Square, London, S.W.1.
International Union for Child Welfare, 16 rue du Mont Blanc, Geneva.
Union Internationale Contre le Péril Vénérien, Institut Alfred Fournier, 25 boulevard Saint Jacques, Paris, 14.
Union Internationale Contre la Tuberculose, 66 boulevard Saint Michel, Paris, 5.
Union Internationale des Organismes Familiaux, 28 place Saint Georges, Paris, 9.
United Nations Educational, Scientific and Cultural Organisation, 19 avenue Kleber, Paris, 6.
World Council for Early Childhood Education, Geneva.
World Federation for Mental Health, 19 Manchester Street, London, W.1.
World Health Organisation (Public Information Office), Palais des Nations, Geneva.

APPENDIX IX

SOME USEFUL STATISTICS

In this Appendix are given some selected statistics which may be of value to the health educator. Some are necessary in forming a picture of the outstanding health problems yet to be faced, others interesting as indicating the progress so far achieved, and yet others helpful as providing material for calculation and graphical representation.

Wherever possible, permission has been obtained from publishers to quote the figures here given, and grateful acknowledgment of their generosity is made. In a few cases it proved impossible to obtain replies to communications and, after repeated enquiry, permission was assumed—it is hoped, correctly.

Sources

The information given here derives, in some cases with adaptation, from the following sources, which are referred to by the indicated abbreviations :—

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B.C.G. *The Achievements of B.C.G. Vaccination*, by Gerhard Hertzberg (Oslo Public Health Service.)

B.I.P.O. *British Institute of Public Opinion.*

C.D. *Civilisation and Disease*, by H. E. Sigerist. (Cornell University Press.)

C.D.C. *Communicable Disease Control*, by G. W. Anderson and M. G. Arnstein. (Macmillan.)

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E.B.11. *Encyclopædia Britannica.* 11th Edition.

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E.V.S.R.1. *Epidemiological and Vital Statistics Report of W.H.O. (Vol.* 1).

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G.44. *Annual Report of School Medical Officer*, 1944 (Glossop).

H.C.F. *Health Care of the Family*, by R. L. Todd and R. B. Freeman. (Saunders).

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H.F. *Housing and the Family*, by M. J. Elsas. (Meridian Books.)

H.H. *Housing and Health*, by J. B. Orr and F. Wells. (Dent.)

H.S.C.47. *The Health of the School Child*, 1947. (H.M. Stationery Office.)

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L.C.C.48. *Report of County Medical Officer and School Medical Officer*, 1948. (London County Council.)

L.C.C.H.W.38. *Report of School Medical Officer on the Heights and Weights of Elementary Schoolchildren*, 1938. (London County Council.)

M.A.M. *Man against Microbe*, by J. W. Bigger. (English University Press.)

M.H.S.U. *Medicine and Health in the Soviet Union*, by H. E. Sigerist. (Citadel Press.)

M.L.I.C. *Metropolitan Life Insurance Company.* (Policy Statistics.)
M–O. *Mass-Observation.*
N.H.S.38. *National Health Survey*, 1938. (U.S. Public Health Service.)
P.P.G.B. *Population Policy in Great Britain.* (Political and Economic Planning.)
P.P.H. *Poverty and Public Health*, by G. C. M. M'Gonigle and J. Kirby. (Gollancz.)
Q.R.41–50. *Quarterly Returns of the Registrar-General*, 1941–50. (H.M. Stationery Office.)
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R.R.C.P. *Report of Royal Commission on Population.* (H.M. Stationery Office.)
R.S.C.L.P. *Report on the Sanitary Condition of the Labouring Population of Great Britain*, 1842. (H.M. Stationery Office.)
S.45. *Annual Report of School Medical Officer*, 1945 (Salford).
S.A.T. *Social Aspects of Tuberculosis*, by S. Roodhouse Gloyne. (Faber.)
S.M.S.U. *Socialised Medicine in the Soviet Union*, by H. E. Sigerist. (Gollancz.)
S.P.S. *Safety Precautions in Schools.* (H.M. Stationery Office.)
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S.Y.B.45. *Statistical Year Book of the League of Nations*, 1945.
T.N.H. *Tuberculosis and National Health*, by H. H. Thomson. (Methuen.)
V.S.U.S.44. *Vital Statistics of the United States*, 1944. (U.S. Government Printing Office.)
W.H.O. *World Health Organisation.*
Y.B.I. *Youth in British Industry*, by J. Gollan. (Gollancz.)

Definitions

Except where otherwise stated, rates are given as follows :—

(1) *Birth rate* (fertility)—number of live births registered during the year, per thousand of the population.
(2) *Death rate* (mortality)—number of deaths registered during the year, per thousand of the population.
(3) *Net reproduction rate*—the extent to which a generation of women would reproduce itself if fertility and mortality remained at current rates, taking exact reproduction as unity.
(4) *Standardised death rate*—death rate corrected for the age composition of the population, taking the 1901 population as standard.
(5) *Comparative mortality index*—mortality during the year, compared with the 1938 mortality taken as unity.
(6) *Still-birth rate*—number of still-births registered during the year, per thousand * live births and still-births.
(7) *Neonatal mortality rate*—number of deaths of persons under four weeks of of age registered during the year, per thousand * live births.
(8) *Infant mortality rate*—number of deaths of persons under one year of age registered during the year, per thousand * live births.
(9) *Maternal mortality rate*—number of deaths from obstetrical causes during the year, per thousand confinements.†
(10) *Monthly prevalence rate*—Number of illnesses present in the population at any time during the month, regardless of when they began, per stated number of population.

N.B. : — *means* " no figure available."
O *means* " zero."

* Generally per thousand births registered during the year prior to 1939, and per thousand related births since 1939.
† *or* per thousand births.

Headings

The statistics are grouped under the following headings :—

A. Development and Growth.
B. Causes of Death.
C. Causes of Illness.
D. Geographical Variations.
E. Seasonal Trends.
F. Secular Trends.
G. Economic and Social Conditions.
H. Miscellaneous.

A. Development and Growth

Age at Onset of Menstruation (1,000 Schoolgirls, Salford, during 1940s).

Age .	8+	9+	10+	11+	12+	13+	14+	15+	16+	17+
Number	1	1	11	63	224	366	241	83	8	2

S.45

Daily Energy Requirements of Children.

Age in years	1 to 3	4 to 6	7 to 9	10 to 12	13 to 15
Requirements in Calories .	1,200	1,600	2,000	2,500	2,800 to 3,200

C.H.D.

Distribution of Body-weight between Organs.

Organ	*Percentage of body weight*	
	In neonate	*In adult*
Muscles	25·1	43·4
Skin, fat, etc. . . .	19·7	17·8
Skeleton	13·7	17·4
Brain	12·3	2·2
Liver	4·6	2·8
Stomach and Intestines. .	2·1	2·1
Lungs	1·8	1·5
Heart	0·76	0·46
Kidneys	0·75	0·46

C.H.D.

Average Height and Weight of Elementary Schoolchildren (London, 1938).

Central age	*Height (inches)* Boys	Girls		*Weight (pounds)* Boys	Girls
5	41·8	41·6	. .	40·5	39·7
6	44·1	43·7	. .	44·9	43·6
7	46·3	45·9	. .	49·7	48·1
8	48·5	48·0	. .	54·8	53·2
9	50·6	50·2	. .	60·3	59·0
10	52·5	52·4	. .	66·2	65·6
11	54·4	54·5	. .	72·6	73·0
12	56·2	56·7	. .	79·4	81·5
13	57·8	58·8	. .	86·7	91·2
14	59·4	61·0	. .	94·5	102·2

L.C.C.H.W. 38

Average Height and Weight of Elementary Schoolboys (London, 1905–12 and 1938)

	Height (inches)		*Weight (pounds)*	
Central age	*1905–12*	*1938*	*1905–12*	*1938*
5½	40·9	43·0	37·5	42·7
6½	42·9	45·2	41·2	47·2
7½	45·7	47·4	48·5	52·1
8½	47·4	49·5	51·8	57·5
9½	49·3	51·5	56·2	63·2
10½	51·1	53·5	60·9	69·3
11½	52·9	55·3	65·9	75·9
12½	54·6	57·0	71·7	83·0
13½	56·3	58·7	80·3	90·5

L.C.C.H.W.38

B. Causes of Death

Death by Various Causes (England and Wales, 1945)

	Hundreds of deaths	
Cause	*Males*	*Females*
Diseases of circulatory system	707	733
Cancer and other tumours	371	388
Diseases of nervous system, etc.	261	334
Diseases of respiratory system	322	234
Infective and parasitic diseases	193	142
Diseases of digestive system	119	89
Violence	124	83
Diseases of urinary and genital system, excluding pregnancy and childbirth	130	74
Rheumatism and other general diseases	26	53
Diseases of blood and blood-forming organs	19	26
Diseases of pregnancy and childbirth	—	13
All causes	2,454	2,358

R.G.R.45

Deaths by Various Causes (U.S. Registration Area, 1937)

Cause	*Percentage of total deaths*
Diseases of the heart	23·9
Influenza and pneumonia (all forms)	10·2
Cancer and other malignant tumours	10·2
Nephritis	7·1
Cerebral hæmorrhage and softening of the brain	6·9
Tuberculosis (all forms)	4·8
Congenital malformations and diseases of early infancy	4·4
Motor vehicle accidents	2·7
Diabetes mellitus	2·1
Other causes	28·0

H.E.41

Deaths of Children by Ages and Causes (England and Wales, 1940–44)

(Number of deaths per 100,000 living)

Age-groups—1–5 years		*5–10 years*		*10–15 years*	
Pneumonia and bronchitis	92	Non-war violence	35	Non-war violence	19
Tuberculosis	48	Diphtheria	26	Tuberculosis	16
Non-war violence	47	Tuberculosis	17	Heart disease	8
Diphtheria	31	Pneumonia and bronchitis	10	Diphtheria	6
Whooping cough	22	Appendicitis	5	Pneumonia and bronchitis	6
Measles	17	C.S. meningitis	5	Appendicitis	5
C.S. meningitis	15	Heart disease	4	Rheumatic fever	4
Ear and mastoid	4	Rheumatic fever	3	Cancer	3
Scarlet fever	2	Measles	3	C.S. meningitis	2
All causes	395	All causes	166	All causes	118

H.S.C.47

Deaths of Children by Ages and Causes (United States, 1944)

Age-groups and causes, with tens of deaths

	5–9 years	*10-14 years*	*15-19 years*	*Total*
Violence	350	337	680	1,368
Tuberculosis	34	50	250	337
Heart diseases	49	85	120	255
Pneumonia	62	46	68	176
Appendicitis	42	52	53	147
Cancer, etc.	43	39	60	143
Blood diseases, etc.	38	28	34	100
Poliomyelitis	28	26	21	75
Pregnancy, etc.	—	2	64	66
Influenza	26	18	22	66
Acute rheumatic fever	21	24	19	64
Cerebrospinal meningitis	21	17	22	60
Measles	27	7	6	39
All causes	1,049	983	1,767	3,798

V.S.U.S.44

Deaths of Insured Children by Ages and Causes (United States, 1945–46)

Age and sex groups and causes, with deaths as percentages of total mortality

Age 1–4 years				*Age 5–9 years*				*Age 10–14 years*			
Boys		*Girls*		*Boys*		*Girls*		*Boys*		*Girls*	
A.	26·8	A.	20·8	A.	39·0	A.	24·3	A.	42·4	A.	15·7
P.	13·2	P.	15·8	P.	5·5	R.F.	9·5	R.F.	8·4	R.F.	15·4
C.D.C.	8·0	C.D.C.	8·5	R.F.	5·2	C.D.C.	7·8	P.	4·0	T.	10·4
T.	6·1	C.L.	6·0	Ap.	4·2	P.	7·1	Ap.	3·8	P.	5·3
C.L.	4·7	T.	5·9	C.D.C.	3·2	T.	4·1	T.	3·4	Ap.	4·2
C.M.	3·9	I.	4·7	T.	2·5	Ap.	3·3	C.D.C.	1·9	C.D.C.	1·8

A. = Accidents. P. = Pneumonia. C.D.C. = Communicable diseases of children (*i.e.*, diphtheria, measles, scarlet fever, whooping cough). T. = Tuberculosis. C.L. = Cancer and leukæmia. C.M. = Congenital malformation. I. = Influenza. R.F. = Rheumatic fever, etc. Ap. = Appendicitis.

M.L.I.C.

Fatal Accidents to Children by Age, Sex and Cause (England and Wales, 1941)

Age and sex groups and causes, with number of deaths

0–1 *year*				1–5 *years*				5–10 *years*				10–15 *years*			
Male		*Female*		*Male*		*Female*		*Male*		*Female*		*Male*		*Female*	
S.	307	S.	229	M.V.	261	B.	159	M.V.	375	M.V.	203	M.V.	206	M.V.	75
L.C.	80	L.C.	92	B.	200	M.V.	154	D.	194	B.	67	D.	131	B.	34
B.	47	B.	34	D.	124	D.	45	F.C.	52	F.C.	20	F.C.	47	D.	13
F.C.	10	F.C.	5	F.C.	47	F.C.	26	B.	31	D.	18	C.	15	F.C.	8
D.	5	M.V.	5	S.	11	S.	10	S.	6	S.G.	2	F.A.	11	C.	2
E.	2	D.	2	C.G.	3	C.G.	2	E.	5	F.A.	2	E.	6	F.A.	2
C.G.	1	C.G.	1	F.A.	3	E.	2	C.	4	C.	1	B.	5	C.G.	1
M.V.	1	C.	0	E.	2	F.A.	1	C.G.	2	S.	1	C.G.	3	E.	1
C.	0	F.A.	0	C.	1	C.	0	F.A.	1	E.	0	S.	2	S.	0
F.A.	0	E.	0	L.C.	0	L.C.	0	L.C.	0	L.C.	0	L.C.	0	L.C.	0
Others	21		20		72		55		55		19		87		17
TOTAL	474		388		724		454		725		333		513		153

S. = Suffocation. L.C. = Lack of care of new-born. B. = Burns (accidental). F.C. = Falls, crushing, etc. D. = Drowning. E. = Electricity (not lightning). C.G. = Coal gas poisoning. M.V. = Motor vehicles. C. = Cycle (rider). F.A. = Firearms.

*H.S.C.*47

Fatal Accidents to Insured Children by Age, Sex and Cause (United States, 1945–47)

Age and sex groups and causes, with numbers of deaths

1–4 years (average 1946–47)				*5–14 years* (in 1945)			
Male		*Female*		*Male*		*Female*	
M.V.	87	B.	54	M.V.	185	M.V.	73
B.	53	M.V.	47	D.	139	B.	34
D.	40	F.C.	14	F.A.	48	D.	26
F.C.	18	D.	10	B.	38	F.C.	10
P.	14	P.	6	F.C.	28	F.A.	6
H.C.	12	H.C.	5	R.A.	15	R.A.	4
F.A.	5	G.P.	3	H.C.	9	H.C.	4
G.P.	4	R.A.	2	G.P.	4	C.E.	4
R.A.	1	F.A.	1	P.	3	P.	1

M.V. = Motor vehicles. D. = Drowning. F.A. = Firearms. B. = Burns, etc. F.C. = Falls, crushing, etc. P. = Poisoning (non-gas). G.P. = Gas poisoning. H.C. = Hanging, choking, etc. R.A. = Railway accidents.

M.L.I.C.

Deaths from Industrial Diseases (Great Britain, 1946 and 1948)

	Cases reported	
Cause	*1946*	*1948*
Lead poisoning	8	2
Other poisoning	3	3
Anthrax	1	—
Epitheliomatous ulceration	32	18
Gassing	13	14
Silicosis	586	563
Asbestosis	17	15

*A.A.S.*84–5–6

Causes of Infantile Mortality (England and Wales, 1947)

Cause	*Rate*	
	Males	*Females*
Premature birth	10·53	8·42
Bronchitis and pneumonia	8·65	6·87
Enteritis and diarrhœa	5·88	4·33
Congenital malformations	5·22	4·54
Asphyxia, atelectasis	3·29	2·50
Injury at birth	3·28	2·15
Hæmolytic disease	0·92	0·57
Congenital debility	0·85	0·55
Whooping cough	0·55	0·70
Tuberculous diseases	0·44	0·32
Convulsions	0·40	0·27
Measles	0·31	0·25
Others	5·95	4·69
TOTAL	46·27	36·16

*C.M.O.*48

Age-distribution of Infant Mortality (England and Wales, 1947)

Period	*0–1 day*	*1–7 days*	*1–4 weeks*	*4 weeks–3 months*	*3–6 months*	*6–9 months*	*9–12 months*	*Total*
Infant mortality	7·8	8·7	6·2	6·9	6·0	3·6	2·1	41·4

*C.M.O.*48

Deaths due to Forms of Tuberculosis, by Sex and Age (England and Wales, Civilians, 1947)

Age	*Respiratory tuberculosis*		*Meningeal and nervous system tuberculosis*		*Other tuberculosis*	
	Males	*Females*	*Males*	*Females*	*Males*	*Female*
0–15	200	239	583	497	249	187
15–25	994	2,125	89	155	120	170
25–45	4,119	3,823	75	74	258	247
45 and over	6,365	1,911	37	23	300	260

*C.M.O.*48

C. Causes of Illness

Prevalence of Common Illnesses in Adult (over 16 Years) Population (England and Wales, 1946–47)

Illness	*Mean monthly prevalence rate per 100,000 persons*
Pulmonary tuberculosis	280
Influenza	1,326
Cold, febrile catarrh	13,577
Asthma	904
Diabetes	291
Anæmia, undefined	1,066
Cerebral vascular lesions	289
Sciatica	477
Psychoneurosis	12,630
Migraine	250
Conjunctiva diseases	307
Eyelid and tear gland diseases	622
Cataract	354
Refractive errors	2,686
Middle ear disease	558
Deafness	2,812
High blood pressure	1,352
Peripheral vascular disease and chilblains	733
Varicose veins of legs	2,352
Hæmorrhoids	599
Phlebitis	214
Chronic nasopharyngitis	7,452
Chronic bronchitis	3,110
Tooth and gum disease	4,138
Acute pharyngitis and tonsilitis	772
Gastritis and duodenitis	714
Gastric ulcer	476
Duodenal ulcer	516
Dyspepsia	7,657
Constipation	5,416
Hernia	562
Cystitis, etc.	252
Genital prolapse (women)	495
Menstrual and menopausal disorders (women)	3,041
Boils	528
Cellulitis	369
Chronic ulcer	364
Eczema	289
Rheumatoid arthritis	419
Muscular rheumatism and lumbago	16,055

S.P.E.W.44–47

Sickness of Adults by Age and Sex (England and Wales, 1946–47)

	Illnesses per month per 100 people*		*Days of incapacity per month per 100 people*		*Medical consultations per month per 100 people*	
Age-group	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
16–25 years	79	109	85	88	31	34
25–35 years	97	130	85	67	33	35
35–45 years	104	159	89	72	31	34
45–55 years	125	180	121	105	43	45
55–65 years	140	188	141	112	50	50
65–75 years	160	217	144	160	58	55
75+	182	231	149	181	62	76
All ages 16+	117	162	108	98	40	42

* "Illness" in the general sense, including headaches, coughs, undue fatigue, etc.—in fact, almost anything, apart from accidents, which makes a person feel unwell.

S.P.E.W.44–47

Defects of Schoolchildren requiring Treatment or Observation (London, 1948)

Defect	*Percentage of children examined*
Skin diseases	1·22
External eye disease	0·61
Defective hearing	0·39
Otitis media	0·70
Enlarged tonsils and adenoids	8·16
Defective speech	0·53
Enlarged cervical glands	1·01
Heart and circulation	0·73
Lung disease (not T.B.)	1·30
Orthopædic defects	4·67
Defects of nervous system	0·30
Psychological defects	0·72
Anæmia	0·29

*L.C.C.*48

Illnesses Causing Most Absence from School (United States, 1931)

Cause	*School days lost per 1,000 children per school year*
Colds	1,696
Grippe and influenza	630
Tonsilitis and sore throat	625
Measles	535
Mumps	434
Digestive disorders	411
Whooping cough	327
Headache	319
Accidents	257
Toothache and teeth diseases	186
Chickenpox	175
Earache and ear disease	135
Eye disorders	107

*H.E.*41

Accidents in Schools by Activities of Pupils (Four British Local Education Authorities, 1942–46)

	Percentage of all accidents occurring while engaged in activity		
Activity	*Elementary schools*	*Grammar schools*	*Technical schools and colleges*
Playground	48·6	18·8	3·3
Organised games and P.T.	16·4	47·6	19·1
In school (general)	25·3	17·6	20·5
Domestic subjects	1·2	0·8	0·6
Science	0·2	4·6	7·2
Handicraft : hand tools	2·0	4·2	38·1
Handicraft : machinery	0·2	0·8	9·5
Gardening	1·7	1·8	—
On road	3·7	3·6	1·7
Farm work	0·6	0·2	—
School camp	0·1	—	—

S.P.S.

D. Geographical Variations

Population of Main Countries (1947)

Country	*Estimated population in millions*
China	460*
India	340*
U.S.S.R.	190*
U.S.A.	144
Japan	78
Pakistan	70*
Germany	66
Great Britain	48
Brazil	48
Italy	46
France	41
Spain	28
Korea	28
Poland	24
Mexico	23

* Approximate.

R.R.C.P.

Birth and Death Rates by Countries
(1928–38 and 1947, except where otherwise stated)

Country	*Death rate per 1,000*		*Birth rate per 1,000*	
	*1928–38**	*1947*	*1928–38**	*1947*
Egypt	30·0	28·8	45·8	54·3 (*1946*)
Canada	9·9	9·4	20·6	28·6
Chile	24·4	16·7	33·5	33·8
U.S.A.	11·1	10·1	17·4	25·9
Venezuela	18·1	13·9	29·3	38·4 (*1946*)
India	23·7	18·1	34·9	27·9 (*1946*)
Belgium	13·3	13·3	16·5	17·7
Bulgaria	15·6	13·4	29·5	25·6 (*1946*)
Denmark	11·0	9·7	18·0	22·1
Finland	13·6	11·9	19·9	27·3
France	15·7	13·0	16·2	21·0
Hungary	15·3	12·4	22·0	18·8
Eire	14·2	14·9	19·5	23·1
Italy	14·1	11·3	23·8	21·6
Malta	21·4	13·0	33·3	39·3
Norway	10·4	9·3	15·6	21·6
Netherlands	8·8	8·1	20·8	27·7
Portugal	17·0	13·3	29·0	23·9
England and Wales	12·0	12·0	15·1	20·5
Sweden	11·7	10·8	14·5	19·0
Switzerland	11·6	11·3	16·4	19·3
Czechoslovakia	13·5	11·9	18·4	23·4
New Zealand	8·5	9·7	17·3	26·4

* Mean rate.

*E.V.S.R.*1

Expectation of Life at Birth by Countries (between 1928 and 1941)

Country	*Expectation in years* — *Males*	*Females*	*Date*
South Africa (whites)	58·95	63·06	*1935–37*
South Africa (other colours)	40·18	40·86	*1935–37*
U.S.A. (whites)	62·81	67·29	*1939–41*
U.S.A. (other colours)	52·26	55·56	*1939–41*
British India	26·91	26·56	*1931*
Japan	46·92	49·63	*1935–36*
Germany	59·86	62·81	*1932–34*
Denmark	63·50	65·80	*1936–40*
France	54·30	59·02	*1928–33*
Ireland	58·20	59·62	*1935–37*
England and Wales	60·18	64·40	*1937*
Sweden	64·30	66·92	*1936–40*
New Zealand	65·46	68·45	*1934–38*

*S.Y.B.*45

Infant Mortality Rates by Countries (1947 except where otherwise stated)

Egypt (1945)	152·8	Austria	78·3
Mauritius	113·9	Belgium	68·7
Southern Rhodesia (Europeans)	38·3	Bulgaria	129·5
Canada	45·5	Denmark	40·4
Mexico	93·0	France	66·5
United States	32·2	Germany (Berlin)	121·3
Barbados	163.4	Ireland	67·0
Panama Canal Zone	32·1	Italy	85·5
Chile	160·9	Portugal	107·3
Ceylon	101·0	Sweden	25·4
India	145·6	England and Wales	41·8

Palestine (1945) Jews, 35·8 ; Moslems, 93·9.

N.B.—Some figures provisional.

*D.Y.*48–50

Deaths from Certain Diseases Reported in Certain Countries (1940s)

Countries	*Malaria* (1944)	*Diphtheria* (1946)	*Syphilis* (1945)	*Dysentery* (1946)	*Paratyphoid and typhoid* (1946)	*Smallpox* (1946)
Egypt*	2,141	594	238	444	545	16
Canada	6	227	739	54	91	0
U.S.A.	580	1,259	14,062	952	407	25
Mexico	26,492	1,048	3,236	7,928	5,552	561
China	643	328	—	2,469	1,269	2,593
India	4,352,143	—	—	—	—	26,849
Belgium	0	496	252	—	107	5
Denmark	2	109	176	1	6	0
Spain	523	472	1,391	263	2,343	1
Netherlands	4	1,781	564	77	99	0
England and Wales	7	455	2,378	121	51	11
Sweden	0	57	140	4	25	0
Switzerland	0	189	217	2	20	0
Czechoslovakia†	—	1,486	768	50	696	0
New Zealand‡	0	49	86	7	7	0

* Localities with Health Bureau only.
† Excluding Slovakia.
‡ Exclusive of Maoris.
N.B.—Some of the above figures may be inaccurate for certain countries.

W.H.O.

Deaths from Tuberculosis (all forms) by countries, (1937–47)

Country	*Death rate per 100,000 inhabitants*					
	1937	1939	1941	1943	1945	1947
Canada	60	53	53	52	46	43
Chile	253	250	252	252	254	237 (*1946*)
U.S.A.	54	47	44	43	40	32
Belgium	71	68	98	82	78	64
Denmark	44	34	35	34	33	30
Spain	120	122	126	113	112	119 (*1946*)
Finland	200	197	196	193	187	178 (*1946*)
Eire	123	113	124	146	124	122
Malta	60	57	88	97	58	66
Norway	98	86	80	69	65	65 (*1946*)
Netherlands	48	41	59	70	86	37
Portugal	151	143	160	152	152	153
E. and W.	70	62	69	61	56	54
Scotland	74	70	81	77	74	80
Sweden	86	75	75	69	59	51
Switzerland	87	80	79	76	83	67
New Zealand	39	40	39	37	38	31

*E.V.S.R.*1

E. Seasonal Trends

Meteorological Conditions by Season (England and Wales)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Mean daily temperature at sea level. Degrees F. (Average 1906–1935) .	40·5	40·6	42·9	46·6	53·2	57·7	61·1	60·9	57·0	50·9	44·1	41·5
Rainfall. Inches (Average 1881–1915) .	2·99	2·57	2·67	2·12	2·30	2·44	2·87	3·35	2·54	3·97	3·49	3·92
Sunshine. Hours per day (Average 1909–1933) .	1·50	2·35	3·61	4·95	6·09	6·60	5·71	5·40	4·65	3·35	2·04	1·28

*A.A.S.*86

Deaths of Males by Cause and Month of Occurrence (England and Wales, 1945)

Type of disease causing death	*Tens of deaths caused*											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Circulatory system .	945	684	643	549	567	489	470	443	447	509	556	735
Cancer and tumours .	327	284	290	292	302	302	307	312	312	321	318	334
Respiratory system .	666	428	308	213	200	155	139	126	139	190	227	406
Nervous system . .	316	242	230	209	219	188	192	181	179	196	199	251
Infective and parasitic .	235	180	186	160	160	143	133	130	118	139	150	187
Digestive system . .	130	98	102	93	99	91	94	96	93	96	89	109
Violence . . .	132	120	134	97	94	93	99	96	86	93	89	103
All causes (100's) . .	317	237	221	190	195	173	169	163	162	181	190	245

*R.G.R.*45

Incidence of certain Illnesses by Season (England and Wales, 1946–47)

Monthly Prevalence Rate as percentage of mean for whole year

Illness	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.
Colds, influenza . .	126	143	179	158	167	105	70	58	47	33	36	85
Heart and artery diseases	112	116	121	135	125	113	84	76	78	69	80	89
Respiratory diseases .	110	109	110	121	115	108	93	90	87	77	84	94
Rheumatic diseases .	114	118	111	110	105	100	97	90	90	86	87	92
Nervous complaints .	122	121	108	106	111	91	90	94	93	84	84	97
Genito-urinary and venereal diseases .	127	103	93	129	112	91	89	87	98	73	80	120
Skin and cellular tissue diseases . . .	107	106	103	100	117	108	95	95	92	93	87	97
Ear and mastoid diseases	105	127	115	101	118	79	85	85	94	102	101	92

*S.P.E.W.*44–47

Incidence of certain Infectious Diseases by Season (England and Wales, 1945)

Month	*Typhoid fever*	*Para-typhoid fever*	*Cerebro-spinal fever*	*Scarlet fever*	*Whooping cough*	*Diphtheria*	*Measles*	*Acute poliomyelitis, etc.*
January	+		++		+++		+++	
February	+		++++				++++	
March	+	+	++++				+++++	
April			++				++++	
May		+					++++	
June		++						
July	++	+++						+++
August	+	+						+++++
September	++++	+++++						++++
October	++	++						+++
November		+		+		++		++++
December	+			+		+		

A cross (+) is placed by each month for each week in which the number of notifications is more than 30 per cent. above the weekly average.

*R.G.R.*45

F. Secular Trends

Distribution of World Population (1750 and 1900)

Continent	*Millions* 1750	1900	*Percentage increase* 1750–1900
Asia	479	937	96
Europe	140	401	186
Africa	95	120	27
Central and South America	11	63	473
Australasia	2	6	200
North America	1·3	81	6,140

R.R.C.P.

Population of England and Wales (1801–1949)

Year	1801	1811	1821	1831	1841	1851	1861	1871	1881
Population in millions	8·89	10·16	12·00	13·90	15·91	17·93	20·07	22·71	25·97
Year	1891	1901	1911	1921	1931	1941	1946	1948	1949
Population in millions	29·00	32·53	36·07	37·89	39·95	41·75	42·75	43·50	43·75

*P.P.G.B., A.A.S.*86, *Q.R.*50

Growth of Town Populations during Industrial Revolution

(Population in thousands)

Town	Manchester and Salford	Leeds	Sheffield	Bradford	Blackburn
1801	90	53	46	13	12
1831	237	123	92	44	27
1851	400	172	135	104	65

B.A.

Birth and Death Rates (England and Wales, 1841–1940)

Period	*Birth rate*	*Death rate*	*Infant Mortality rate*	*Maternal Mortality rate*
1841–50 .	32·6	22·4	153	
1851–60 .	34·1	22·2	154	
1861–70 .	35·2	22·5	154	
1871–80 .	35·4	21·4	149	
1881–90 .	32·4	19·1	142	
1891–1900 .	29·9	18·2	153	
1901–10 .	27·2	15·4	128	4·01
1911–20 .	21·8	14·4	100	3·85
1921–30 .	18·3	12·1	72	3·85
1931–40 .	14·9	12·3	59	3·74

*R.G.R.*45

Birth and Death Rates (England and Wales, 1941–50)

Year	*Birth rate*	*Still-birth rate*	*Infant Mortality rate*	*Maternal Mortality rate*	*Death rate*	*Standardised Death rate**	*Death rate at ages ** 0–4	5–9	45–54	65–74
1941 . .	14·1	34 4	60	2·80	12·8	11·5	14·5	1·9	7·3	39·5
1942 . .	15·6	33·0	51	2·48	11·5	10·4	12·3	1·3	6·4	35·4
1943 . .	16·2	30·2	49	2·30	11·9	11·1	12·4	1·2	6·4	36·4
1944 . .	17·5	27·7	45	1·93	11·6	10·7	11·7	1·2	6·2	34·6
1945 . .	16·1	27·6	46	1·80	11·4	10·7	10·8	1·0	5·9	34·6
1946 . .	19·2	27·2	43	1·43	11·5	10·3	10·3	0·7	5·8	34·6
1947 . .	20·6	24·1	41	1·18	12·0	10·2	10·6	0·8	5·7	35·2
1948 . .	17·9	23·2	34	1·01	10·8	9·2	7·6	0·6	5·3	32·1
1949 . .	16·7	22·7	32		11·7					
1950 . .	15·8	22·6	30		11·6					

* *For females.*

*A.A.S.*86, 87 *C.M.O.*48, 49 *Q.R.*48–49–50

Approximate Reproduction Rates (England and Wales, 1938–1948)

Year	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948
Reproduction Rate	0·810	0·808	0·772	0·761	0·853	0·900	0·996	0·909	1·103	1·205	1·070

*Q.R.*49

Mortality of certain Age-groups (England and Wales, 1870–1946)

Death rate per 1,000 population (males)

Year	0–4 years	5–9 years	15–19 years	35-44 years	65-74 years
1870–72 .	71·7	8·1	6·1	14·2	67·6
1890–92 .	63·3	4·8	4·1	13·0	77·5
1910–12 .	41·0	3·2	2·9	8·0	63·1
1930–32 .	21·5	2·3	2·5	5·6	57·5
1940 . .	17·5	2·1	2·8	5·8	61·3
1946 . .	13·4	1·0	1·6	3·5	49·8

*A.A.S.*84–5

Obstetric Mortality Rates (U.S.A., 1920–42)

Year	1920	1925	1930	1935	1940	1942
Infant mortality rate .	85·8	71·7	64·6	55·7	47·0	40·4
Maternal mortality rate.	8·0	6·5	6·7	5·8	3·8	2·6

H.C.F.

Expectation of Life at Birth (England and Wales, 1871–1939)

Period	1871–80	1881–90	1891–1900	1901–10	1910–12	1920–22	1930–32	1938–39
Expectation in years								
Males	41·4	43·7	44·1	48·5	51·5	55·6	58·7	61·8
Females	44·6	47·2	47·8	52·4	55·4	59·6	62·9	65·8

P.P.G.B.

Expectation of Life of Males at Different Ages (England and Wales, 1871–80 and 1930–32)

Age		0	10	20	30	40	50	60	70
Expectation of life	1871–80	41·3	47·6	39·4	32·1	25·3	18·3	13·1	8·3
	1930–32	58·7	55·8	46·8	38·2	29·6	21·6	14·4	8·6

M.A.M.

Distribution of Families by Size (Marriages of 1860 in England and Wales, and of 1925 in Great Britain)

Number of children born	0	1	2	3	4	5	6	7	8	9	10	10+
Marriages of about 1860 (E. and W.)	9	5	6	8	9	10	10	10	9	8	6	10%
Marriages of 1925 (G.B.)	17	25	25	14	8	5	3	2	1	0·6	0·4	0·3%

R.R.C.P.

Age Distribution of the Population (United Kingdom, 1871–1948)

Population in tens of thousands

	1871		1901		1931		1948	
	Males	*Females*	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*
Total	1,331	1,412	1,849	1,974	2,206	2,398	2,429	2,577
0–4 years	185	184	219	219	178	175	218	208
5–14 years	313	309	402	402	386	378	341	330
15–24 years	246	261	364	386	395	407	355	347
25–59 years	491	544	721	807	1,011	1,143	1,185	1,256
66–74 years	80	92	106	129	199	236	263	335
75+ years	17	22	22	31	37	59	66	103

*A.A.S.*84–5–6

Deaths from Important Diseases (England and Wales, 1861–1945)

Period	*Deaths per year per million living (standardised)*			*Comparative mortality index (1938 = 1)*		
	Typhoid and para-typhoid	Tuber-culosis (all forms)	Cancer	Typhoid and para-typhoid	Tuber-culosis (all forms)	Cancer
1861–70 .	—	3,263	396	—	5·46	0·38
1871–80 .	321	2,882	484	84·37	4·73	0·46
1881–90 .	199	2,444	610	51·94	4·01	0·59
1891–1900 .	175	2,021	767	45·78	3·30	0·75
1901–10 .	91	1,646	867	23·84	2·70	0·85
1911–20 .	34	1,375	928	9·28	2·34	0·92
1921–30 .	11	992	985	2·85	1·62	0·98
1931–40 .	4	695	974	1·21	1·17	1·00
1944 *or* 1941–45	1	657	968	0·53	1·10	0·99

*R.G.R.*45
*H.S.W.*47

Deaths from Important Diseases of Childhood (England and Wales, 1861–1945)

Period	*Deaths per year per million living at ages under 15*			
	Scarlet fever	Whooping cough	Diphtheria	Measles
1861–70 . .	2,282	1,372	1,122	1,148
1871–80 . .	1,664	1,316	747	976
1881–90 . .	787	1,171	804	1,153
1891–1900 .	383	1,037	873	1,144
1901–10 . .	271	815	571	915
1911–20 . .	123	554	437	838
1921–30 . .	64	405	298	389
1931–40 . .	37	186	288	206
1941–45 . .	10	140	152	75

*R.G.R.*45

Death Rates from Enteric Fever (London, 1891–1946)

Quinquennium .	1891 –95	1896 1900	1901 –05	1906 –10	1911 –15	1916 –20	1921 –25	1926 –30	1931 –35	1936 –40	1941 –45
Death rate . .	0·13	0·14	0·084	0·045	0·028	0·016	0·011	0·008	0·005	0·004	0·003

*L.C.C.*48

Tuberculosis Death Rate (U.S. Registration Area, 1900–04 to 1938)

Period .	1900-04	1905-09	1910-14	1915-19	1920-24	1925-29	1930-34	1938
Deaths per 100,000 population .	194	175	153	142	98	82	64	49

*H.E.*41

Mortality of Insured Children from Leading Causes (1930–46, U.S.A.)

Figures represent decline as percentage of 1930 mortality

Causes	1–4 years		5–9 years		10–14 years	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
All causes . .	61·0	61·7	56·7	62·0	53·0	61·2
Communicable diseases of childhood *	78·9	79·8	89·2	77·8	71·4	84·3
Tuberculosis . .	53·4	68·6	77·5	76·2	76·9	77·2
Pneumonia .	73·5	72·9	68·6	78·3	66·7	78·4
Diarrhœa . .	90·7	90·0	—	—	—	—
Rheumatic fever, etc.	—	—	68·9	57·7	65·9	59·1
Appendicitis . .	76·6	71·1	79·8	85·4	78·1	86·0
Accidents . .	8·2	18·6	37·4	41·7	35·5	39·3

* *I.e.*, diphtheria, measles, scarlet fever, whooping cough.

M.L.I.C.

Notification of Diphtheria (England and Wales, 1940–49)

Year	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949
Cases	46280	50797	41404	34662	23199	18596	11986	5609	3607	1890

*A.A.S.*84–5–6
*Q.R.*48–9–50

Deaths from Diphtheria (England and Wales, 1941–49)

Year	1941	1942	1943	1944	1945	1946	1947	1948	1949
Deaths	2,641	1,341	1,371	934	722	472	244	136	84

*Q.R.*41–49–50

Diphtheria Death Rate at Ages 5–10 (England and Wales, 1939–45)

Year	1939	1940	1941	1942	1943	1944	1945
Deaths per 100,000 living	32	37	36	26	17	12	9

*H.S.C.*47

Diphtheria Death Rate of Children under 15 years (New York City, 1874–78 to 1934–38)

Quinquennium	1874–78	1884–88	1894–98	1904–08	1914–18	1924–28	1929–33	1934–38	1942–46
Deaths from diphtheria per 100,000 children under 15 years	636	554	363	147	78	38	14	3·7	0·8

N.B.—Diphtheria antitoxin discovered in 1890. Immunisation introduced experimentally in City schools in 1916 and more extensively in 1919. Pre-school immunisation pressed from 1929.

*H.E.*41, 48

Smallpox Death Rate (England and Wales, 1902–08)

Year	1902	1903	1904	1905	1906	1907	1908
Deaths per million living	75	23	15	4	0·6	0·3	0·3

*E.B.*11

Cases of Acute Poliomyelitis and Polioencephalitis by Age and Sex (England and Wales, 1944 and 1947)

Notification rates per 100,000 civilians

Age group	1944 Male	1944 Female	1947 Male	1947 Female
0–1 years	1·4	1·2	37	33
1–3 years	5·1	6·7	88	73
3–5 years	8·5	5·5	86	69
5–10 years	4·7	4·0	67	46
10–15 years	3·4	2·6	47	36
15–25 years	1·9	1·2	28	20
25+ years	0·2	0·3		4

*S.P.E.W.*44–47

Cases of and Deaths due to Scarlet Fever (England and Wales, 1938–47)

Year	*1938*	*1939*	*1940*	*1941*	*1942*	*1943*	*1944*	*1945*	*1946*	*1947*
Cases	99,278	78,101	65,302	59,433	85,084	116,034	92,582	73,622	56,701	58,027
Deaths	311	181	154	133	104	134	107	84	43	42
Case fatality percentage	0·31	0·23	0·24	0·22	0·12	0·12	0·12	0·11	0·08	0·07

*C.M.O.*48

Cases of and Deaths due to Acute Poliomyelitis, including Acute Polioencephalitis (England and Wales, 1940–47)

Year	*1940*	*1941*	*1942*	*1943*	*1944*	*1945*	*1946*	*1947*
Cases	1,079	959	674	456	590	904	755	9,335
Deaths	161	160	132	90	109	139	128	707

*C.M.O.*48

Age Incidence of Poliomyelitis, including Polioencephalitis (England and Wales, 1908–11 and 1947)

Age group	*0–1*	*1–5*	*5–10*	*10–15*	*15–20*	*20–30*	*30 and over*
Per cent. cases in 1912–13	10·1	60·8	18·0	5·1	2·1	2·1	1·7
Per cent. cases in 1947	3·9	26·9	20·7	14·3	16·9	16·5	0·8

*C.M.O.*48

Cases of and Deaths due to Cerebro-spinal Fever (England and Wales, Civilians, 1929–47)

Year	*1929*	*1930*	*1931*	*1932*	*1933*	*1934*	*1935*	*1936*	*1937*	*1938*
Cases	667	674	2,216	2,136	1,695	1,094	883	994	1,140	1,288
Deaths	590	635	1,446	1,218	946	732	619	638	701	655
Case fatality percentage	88·5	94·2	65·3	57·0	55·8	66·9	70·1	64·2	61·5	50·9

Year	*1939*	*1940*	*1941*	*1942*	*1943*	*1944*	*1945*	*1946*	*1947*
Cases	1,414	11,185	9,893	5,286	2,976	2,018	1,829	2,010	2,282
Deaths	503	2,459	2,065	1,143	746	570	527	509	534
Case fatality percentage	35·6	22·0	20·9	21·6	25·1	28·2	28·8	25·3	23·4

*C.M.O.*48

New Cases of Syphilis * (England and Wales, 1931–47)

Year	*1931*	*1932*	*1933*	*1934*	*1935*	*1936*	*1937*	*1938*	*1939*
Males	6,421	6,196	5,949	4,888	4,226	4,033	3,986	3,744	3,574
Females	2,683	2,532	2,141	2,030	1,745	1,642	1,647	1,494	1,412

Year	*1940*	*1941*	*1942*	*1943*	*1944*	*1945*	*1946*	*1947*
Males	4,029	5,023	5,470	5,159	4,384	5,214	10,705	8,750
Females	1,582	2,309	3,576	4,483	4,934	5,527	6,970	5,416

* *i.e.*, cases in which the infection has been acquired during a preceding period of less than one year.

*C.M.O.*48

Syphilis in the U.S.S.R. (1913–36)

Year	*1913*	*1928*	*1929*	*1930*	*1931*	*1936* (in cities)
Syphilis patients per 100,000 population.	76·8	42·8	32·2	29·5	24·7	18·6

M.H.S.U.

Incidence of Plague in Asiatic Ports (1911–40)

Period	*Cases reported* Hong Kong	Rangoon	Calcutta	Bombay
1911–14 .	4,684	4,820	4,861	11,273
1915–18 .	487	5,277	560	5,437
1919–22 .	1,933	4,437	568	2,427
1925–28 .	4	1,373	6	744
1929–32 .	2	199	0	139
1933–36 .	0	68	0	89
1937–40 .	0	28	0	0

*E.I.B.*45

Height and Weight of Schoolchildren (Leicester, 1906 and 1945)

	5–6 years		8–9 years		12–13 years	
	Boys	Girls	Boys	Girls	Boys	Girls
Height (ins.)						
In 1906 . .	40·7	39·2	47·0	46·8	54·7	55·4
In 1945 . .	42·8	42·7	49·6	49·2	56·9	57·7
Weight (lbs.)						
In 1906 . .	38·1	37·4	51·7	50·0	70·9	71·6
In 1945 . .	41·9	40·7	56·3	54·6	79·6	82·9

*L.*45

Some Medical Defects of Schoolchildren (Glossop, 1921–1944)

Nature of defect	*Percentage of children found to be suffering from defect at routine inspections* 1921	1931	1938	1944
Malnutrition (severe) . .	2·37	4·0	0·89	0·0
Malnutrition (slight) . .	11·2	1·3	9·2	5·1
Tonsillitis, chronic, requiring treatment	2·8	3·7	0·74	0·59
Adenoids only . . .	2·8	1·5	0·14	0·59
Tonsils and adenoids . .	3·2	2·2	0·28	0·12
Anæmia, needing treatment .	3·4	1·5	0·0	0·48
Tuberculosis, lungs. . .	0·99	0·3	0·0	0·12
Rickets	1·1	0·7	0·59	0·24
Deformity of spine . .	0·75	0·0	0·14	0·0

*G.*44

Ringworm Prevalence among Schoolchildren (Leicester, 1911–45)

Quinquennium	1911 –15	1916 –20	1921 –25	1926 –30	1931 –35	1936 –40	1940 –45
Cases discovered .	6,330	5,682	3,401	1,415	726	620	1,465

N.B.—(1) X-ray treatment introduced in 1916.
(2) War between 1914–18 and 1939–45.

*L.*45

State of Deciduous Teeth of British Schoolchildren (1929 and 1943)

Date	*Percentage of children showing*			
	No caries	*Little caries*	*Some caries*	*Much caries*
1929 . .	4·7	11·7	20·8	62·8
1943 . .	22·4	25·9	22·4	29·3

N.B.—1,293 Sheffield and Birmingham children in 1929.
1,604 London children in 1943.

C.H.D.

Numbers of Decrees Nisi made Absolute During Year (England and Wales, 1901–40)

Period . .	*1901 –05*	*1906 –10*	*1911 –15*	*1916 –20*	*1921 –25*	*1926 –30*	*1931 –35*	*1936 –40*
Average number per year .	546	601	636	1,481	2,673	3,284	3,909	6,029

*R.G.R.*45

Numbers of Decrees Nisi Granted during Year (England and Wales, 1938–48)

Year .	*1938*	*1939*	*1940*	*1941*	*1942*	*1943*	*1944*	*1945*	*1946*	*1947*	*1948*
Number .	7,621	7,019	7,111	6,318	8,608	10,724	14,356	18,982	31,871	52,249	40,764

*A.A.S.*46

Drunkenness (England Wales, 1913–48)

Year. .	*1913*	*1938*	*1939*	*1940*	*1941*	*1942*	*1943*	*1944*	*1945*	*1946*	*1947*	*1948*
Persons proceeded against (thousands)	204	54	52	46	40	27	26	22	20	20	24	22

*A.A.S.*84–5–6

Juveniles found Guilty of Offences (England and Wales, 1938–48)

Year	*1938*	*1939*	*1940*	*1941*	*1942*	*1943*	*1944*	*1945*	*1946*	*1947*	*1948*
Number	55,511	53,106	66,080	72,483	66,522	68,049	68,069	73,620	62,355	58,243	71,998

*A.A.S.*86

Medical Facilities in the U.S.S.R. (1913–41)

Facility	*Number of units available*		
	1913	*1932*	*1941*
Non-psychiatric beds	142,310	372,233	661,431
Psychiatric beds	36,240	39,945	73,992
Maternity beds	6,824	43,657	141,873
Sanatoria and health resort beds . .	2,000	63,300	132,000
Urban medical centres	1,230	7,340	13,461
Rural medical centres	4,367	9,883	13,512
Tuberculosis dispensaries	43	498	1,048
Venereal disease dispensaries . . .	12	683	1,498
Women's and children's consultation centres	9	3,288	5,803
Physicians	19,785	76,027	130,348

M.H.S.U.

G. Economic and Social Conditions

Average Age at Death by Social Class (England, 1838–40)

Place	*Date*	*Average age at death in families of*		
		Gentlemen, etc.	*Tradesmen, etc.*	*Labourers, etc.*
Bethnal Green .	1839	45	26	16
Bolton . . .	1839	34	23	18
Kensington . .	1838	44	29	26
Leeds . . .	1839	44	27	19
Liverpool . .	1840	35	22	15
Whitechapel . .	1838	45	27	22
Wiltshire . .	1840	50	48	33

R.S.C.L.P.

Birth and Death Rates by Neighbourhood (England and Wales, 1923–27)

	England and Wales	*Stockton-on-Tees*	*Riverside slum area of S.-on-T.*
Birth rate. . .	18·2	23·0	36·5
Death rate . .	12·0	14·0	22·1
Infant mortality rate .	71·8	91·8	173·2

P.P.H.

Still-births, Neonatal Mortality and Infant Mortality by Social Class (England and Wales, 1939)

Class	*I*	*II*	*III*	*IV*	*V*
Still-birth rate. . .	24·4	33·4	35·6	37·6	39·7
Neonatal mortality rate .	18·9	23·4	25·4	27·7	30·1
Infant mortality rate .	26·8	34·4	44·4	51·4	60·1

I=Upper professional and managerial classes.
II=Smaller employers, managers and professions.
III=Skilled and " black-coated " workers.
IV=Semi-skilled, including agricultural workers.
V=Unskilled.

P.P.G.B.

Deaths from Pulmonary Tuberculosis and Pneumonia by Social Class (Ten States of U.S.A., 1934)

Social group	*Deaths per 100,000 of 25–45 age-group*	
	P.T.	*Pn.*
Professional	28·6	5·8
Clerks	67·6	6·5
Skilled workers . . .	69·0	7·2
Unskilled workers . . .	193·5	9·4

C.D.

Deaths from Plague by Social Class (Indian Epidemic)

Social group	*Deaths per 1,000,000 of population*
Low Caste Hindus	53·7
Brahmins	20·7
Mohammedans	13·7
Eurasians	6·1
Europeans	0·8

C.D.

Physical State of Children by Social Class (Newcastle-upon-Tyne, 1933)

	Percentage above normal		*Percentage normal*		*Percentage below normal*	
	P.C.	*W.C.*	*P.C.*	*W.C.*	*P.C.*	*W.C.*
Weight . . .	48·4	11·2	38·7	33·6	12·9	55·2
Height . . .	25·0	1·7	70·2	51·3	4·8	47·9
Hæmoglobin index .	4	0	80	19	16	81

P.C. = children of professional classes.
W.C. = children of working classes.

P.P.H.

Height of Males by Social Class (Britain, 1926–35)

Mean height in inches

Age	*Council school boys up to 14 years Employed males from 15 years*	*Christ's Hospital boys*	*Public school boys* *
5	41·4	—	—
6	43·0	—	—
7	45·4	—	—
8	47·8	—	—
9	49·2	52·2	—
10	51·3	53·7	—
11	52·7	55·2	—
12	55·0	56·7	—
13	56·2	58·6	61·9
14	58·0	61·1	63·7
15	60·4	63·7	65·3
16	62·9	66·9	68·1
17	64·9	67·7	69·8
18	66·1	68·7	70·8
19	66·3	69·4	—
20	66·7	—	—
21	66·8	—	—

* In English usage, *e.g.*, " expensive private schools."

F.H.I.

Food Consumption by Income Level (United Kingdom, 1932–35)

Average Food Consumption per head per week

Income group . .	*I*	*II*	*III*	*IV*	*V*	*VI*	
Cost	*4*	*6*	*8*	*10*	*12*	*14*	*shillings*
Meat	23·1	31·6	37·1	41·5	44·8	49·4	ounces
Fish	2·7	5·5	8·2	10·4	12·2	13·5	ounces
Flour (including bread equivalents . .	66·0	68·0	68·0	67·0	65·0	60·0	ounces
Fresh milk . . .	1·1	2·1	2·6	3·1	4·2	5·5	pints
Condensed milk (liquid milk equivalents) .	0·7	0·6	0·55	0·5	0·4	0·3	pints
Butter	3·0	6·5	7·5	8·5	9·5	11·0	ounces
Margarine . . .	4·5	3·5	2·5	2·0	1·6	1·3	ounces
Fruit	14·0	21·7	25·8	27·9	30·5	39·3	ounces
Vegetables (excluding potatoes) . . .	16·0	20·0	27·2	30·6	32·3	34·0	ounces

F.H.I.

Physical State of Children and Diet (Stockton-on-Tees, 1928)

Condition		Bone defects	Pharyngeal condition	Dental decay	Squint	Anæmia
Percentage of children showing condition	Satisfactory diet	31·2	10·2	17·5	1·3	21·5
	Unsatisfactory diet	55·0	23·8	36·6	6·2	40·9

P.P.H.

Disability Rate * by Income (United States, 1935–36)

Diagnosis	*Annual family income* $1,000–$1,500	*Under $1,000*	*Relief*
Tuberculosis	250	388	875
Orthopædic	175	283	420
Rheumatism	138	213	369
Digestive	114	180	340
Nervous	135	204	287
Degenerative	109	156	268
Accidents	129	173	221
Respiratory	91	121	189

* Defined as product of frequency of illness and duration of illness, and expressed as percentage of corresponding figures for families with income of $5,000 and over.

*N.H.S.*38

Physical Strength and Unemployment (Britain, 1935)

Age in years	15½	16½	17½	18½	19½	20½	21½	22½
			Pull in kilograms					
Employed	124	137	152	158	162	168	168	171
Unemployed	119	116	136	135	143	144	149	156

Y.B.I.

Death Rate and Unemployment (Stockton-on-Tees, 1931–34)

Year	*Standardised death rates in population from same neighbourhood*	
	" Employed " families	" Unemployed " families
1931	22·2	36·6
1932	23·9	26·1
1933	16·6	28·1
1934	21·3	25·9

P.P.H.

State of Working-class Dwellings in British Towns and Counties

MANCHESTER, 1938

Out of 5,648 dwellings inspected
132 had no defects.
1,118 had inadequate light.
1,356 had inadequate ventilation.
2,108 were damp.
5,055 had inadequate food storage.

Of 195,370 occupied dwellings, 113,094 had baths.
Of 25,780 dwellings in central area, 3,417 had baths.

SHOREDITCH, 1938

14 per cent. of dwellings had proper bath.
18 per cent. had tub.
68 per cent. had no home bathing facilities.
33 per cent. had only outdoor water supply.
56 per cent. had private water supply.
27 per cent. had indoor W.C.'s.
47 per cent. had private W.C.'s.

COUNTIES, 1944

Water has to be carried more than 200 feet by villagers in

Gloucestershire	to 1,613 houses out of 23,011.
Northamptonshire	to 2,683 houses out of 18,207.
Shropshire	to 2,273 houses out of 16,327.

H.F.

Deaths from Pulmonary Tuberculosis by Housing Conditions

LIVERPOOL (1923–29)

Area	Entire city	Corporation tenements	Slum area
Deaths per 100,000 living	123	164	299

MANCHESTER (1938)

Area	Entire city	Slum area	Wythenshawe Garden City
Deaths per 100,000 living	104	197	72

DETROIT (1927)

Persons per room . .	0·9 or more	0·8	0·7 or less
Deaths per 100,000 living	132	79	52

H.H.

Tuberculosis and Nutrition (Blaydon, Tyneside, preceding 1933)

Average consumption of foodstuffs per head per week

	Meat (lbs.)	*Butter (ozs.)*	*Bread (lbs.)*	*Milk (pts.)*
Tuberculous families .	0·81	2·81	6·42	0·67
Non-tuberculous families .	0·95	4·13	5·80	1·17

T.N.H.

Tuberculosis and Occupation (1921–23)

Occupation	*Comparative mortality figures (comparative figure : 163·5)*
Building foremen and gangers	36·1
Farm bailiffs and foremen	40·4
Bank officials	47·5
Medical practitioners	75·6
Railway signalmen	75·8
Costermongers	374·2
Barmen	439·9
Metal grinders	695·9
Tin and copper miners	1,446·5

T.N.H.

Incidence of Rheumatic Heart Disease by Housing Conditions (Bristol Area, 1937)

Rooms per person							
Under 0·6	0·6–0·8	0·8–1·0	1·0–1·2	1·2–1·4	1·4–1·6	1·6–1·8	1·8 and over
Incidence as percentage of average incidence.							
167	149	114	91	81	59	58	42

H.H.

Scabies and War (Hospital of St. Louis, Paris)

Date	*1939*	*1940*	*1941*	*1942*
Cases treated	9,859	24,559	65,875	102,645

E.I.B.45

Diphtheria and War (Small States of Western Europe)

Country	*Annual cases reported per 100,000 population*	
	1937–40	*1943*
Norway	7	760
Netherlands	15	622
Switzerland	17	85
Denmark	28	64
Sweden	35	38

E.I.B.45

Typhus and War (Germany and French North Africa)

Germany (pre-war boundaries)

Date	*1940*	*1941*	*1942*	*1943*	*After 1943*
Cases reported	6	395	2,400	3,190	Reports discontinued

French North Africa

Date	*1940*	*1941*	*1942*	*1943*	*1944*
Cases reported	3,547	21,726	77,335	27,340	6,226

E.I.B.45

a*

Smallpox and War (Various Countries)

Country	1939	1940	1941	1942	1943	1944	1945	1946	1947
					Cases				
Egypt	0	2	0	0	4,138	11,194	1,355	415	172
Fr. Morocco	16	103	1,951	2,078	1,170	793	2,678	1,870	61
N. Rhodesia	20	9	3	10	124	355	6,384	490	87
Peru	173	371	3,131	2,499	1,826	296	292	699	521
China	2,786	2,546	12,646	9,772	6,450	5,573	5,338	20,562	—
Italy	4	0	0	—	—	2,878	2,831	772	44

*E.V.S.R.*1

Illegitimacy and War (Great Britain)

Year	*1935–38*	*39*	*40*	*41*	*42*	*43*	*44*	*45*	*46*	*47*	*48*
Illegitimate births as percentage of total births	4·7	4·6	4·8	5·9	6·1	7·0	8·0	10·2	7·0	5·6	5·6

R.R.C.P.

H. Miscellaneous

Age-distribution of Population (England and Wales, 1947)

Age	*0–5*	*5–10*	*10–15*	*15–20*	*20–25*	*25–35*	*35–45*	*45–55*	*55–65*	*65–75*	*75–85*	*85 and over*
Preparation per *thousand*	84	68	66	60	62	152	160	133	107	75	29	4

*C.M.O.*48

Diphtheria Incidence and Mortality (Ontario, 1911–40)

Period	*Degree of immunisation*	*Cases per 100,000 population*	*Deaths per 100,000 population*
1911–20	None	119	15·9
1931–40	General	18	1·2

E.H.

Diphtheria Incidence and Mortality (Northamptonshire, 1942)

	Immunised children	*Non-immunised children*
Cases per million children	27	5,202
Deaths per million children	0	772

E.H.

Extent of Immunisation against Diphtheria of Children aged 5–14 Years (London, 1939–47)

Year	*1939*	*1941*	*1943*	*1945*	*1947*
Per cent. immunised (estimated)	10	25	55	70	75

*L.C.C.*48

Vaccination and Attack by Smallpox (Fitchburg, Massachussetts, 1932)

Number exposed to outbreak		*No. of cases*	*Case rate per 100,000 population*
Unvaccinated	5,457	57	1,048
Vaccinated over 40 years prior	4,926	3	60
Vaccinated within 40 years	29,558	0	0

C.D.C.

Prevalence of Smallpox in Relation to Vaccination Law (States of U.S.A., 1933–37)

Annual rate per 100,000 population

States with compulsory vaccination		*States without compulsory vaccination*	
Massachusetts	0	California	8·0
Pennsylvania	0	Minnesota	13·0
Rhode Island	0	Missouri	13·2
Maryland	0·02	Wisconsin	19·4
New Hampshire	0·08	Kansas	22·6
District of Columbia	0·14	Iowa	25·0
New York	0·3	Washington	37·1

C.D.C.

Active Immunisation and Attack by Scarlet Fever (An American Community, 1938)

	Number exposed to infection	*Number infected*	*Percentage infected*
Non-immunised group	1,769	226	13
Immunised group	3,731	33	0·9

C.D.C.

Active Immunisation and Attack by Whooping-cough (An American Community, 1939)

	Number exposed to family contact	*Number infected*	*Percentage infected*
Non-immunised group	160	143	89
Immunised group	83	29	35

C.D.C.

Effect * of Acquired Immunity against Tuberculosis (1914–19)

Personnel	*Cases per 10,000*	*Deaths per 10,000*
British and Dominion troops	6·1	0·4
Chinese native labour corps	36·4	13·4
Indian native labour corps	142·0	53·4
South African native labour corps	290·7	221·9

* Presumed.

S.A.T.

Tuberculosis in B.C.G.-Vaccinated and Unvaccinated Groups attending Tuberculosis Clinic (Norway)

Age-group	*Tuberculosis morbidity*	
	B.C.G. group	*Control group*
Males		
0–2	1 of 52	58 of 102
3–12	1 of 224	129 of 367
13–16	1 of 217	48 of 141
17–24	3 of 177	53 of 165
All ages	6 of 756	307 of 861
Females		
3–12	1 of 174	125 of 359
17–24	6 of 238	72 of 185
All ages	7 of 773	327 of 968

B.C.G.

Main Classes of Juvenile Offence (England and Wales, 1948)

Type of offence	*Number found guilty*
Total	71,998
Larceny	27,650
Breaking and entering	12,574
Highway acts	10,227
Malicious damage	6,490
Railway offences	3,879
Police regulations	2,064
Stealing	1,979
Receiving	990
Sexual offences	739
Betting and gaming	380
Violence against the person	231
Frauds, etc.	73

*A.A.S.*86

Replies of Public (England and Wales) to Questions relating to Health

Do you think that a State-run medical service would, or would not, be beneficial to the nation as a whole ? (1943).

	Total	*By sex*		*By economic level*		
		Men	Women	Higher	Middle	Lower
Percentage Yes	70	73	68	56	70	71
Percentage No	17	16	17	32	22	14
Percentage Uncertain	13	11	15	12	8	15

B.I.P.O.

Should those suffering from an incurable disease be allowed the option, under proper medical safeguards, of a voluntary death ? (1938).

Percentage Yes	Percentage No	Percentage No opinion
62	22	16

N.B.—No great differences by age, sex, or economic level.

B.I.P.O.

Would you favour a law requiring a test for venereal disease for all persons seeking marriage licences ? (1942).

Percentage Yes	Percentage No	Percentage Don't know
64	19	17

B.I.P.O.

During the last seven days have you taken any medicine, pill, capsule or powder ? (1946).

	Total	*By sex*		*By economic level*		
		Men	Women	Higher	Middle	Lower
Percentage Yes	47	38	56	42	42	48
Percentage No	53	62	44	58	58	52
Doctor's prescription	17	13	21	21	15	17
Chemist's recommendation	6	5	8	5	5	7
Others	24	20	27	16	22	24

B.I.P.O.

Feelings about doctor as local authority official (rather than as private practitioner) (1942).

	Total	*Males*	*Females*
Percentage Would be better . .	28	34	22
Percentage Would be worse . .	28	27	28
Percentage Other	44	37	50

M–O.

Attitude of General Public towards Sex Education (1949)

Group	*Percentage disapproving of sex education*
Men	11
Women	17
Middle class . . .	9
Skilled workers . . .	12
Un-skilled workers . .	17
Left school under 15½ . .	16
Left school 15½–16½ . .	11
Left school after 16½ . .	3
Aged under 24 . . .	3
Aged 25–44	14
Aged over 45 . . .	22
London	12
Towns larger than 100,000 .	14
Towns smaller than 100,000 .	15
Rural areas	15
Church of England . .	15
Roman Catholic . . .	16
Nonconformist . . .	13

M—O.

APPENDIX X

SELECTED FILMS AND FILM STRIPS

HERE are listed films and film strips recommended for use in health education. Since the author is familiar mainly with British productions and wished to list only those which he had seen and considered to be of above average quality, titles from other countries are inevitably few.

The audience for which each title is considered suitable is indicated by the following key letters :—

I.P. Infant Pupils (about 5–8 years).
J.P. Junior Pupils (about 8–11 years).
S.P. Senior Pupils (about 11–15 years).
O.A. Older Adolescents (about 15–20 years).
A.G. Adult Groups.
S.G. Specialist Groups.

Catalogues giving outlines of the contents of the titles and details about conditions of loan, hire and/or purchase, may be obtained from the distributors, indicated by the following key letters :—

B.G.C. British Gas Council, 1 Grosvenor Place, London, S.W.1.
B.I.F. British Instructional Films, Mill Green Road, Mitcham, Surrey.
C.F.L. Central Film Library, Imperial Institute, London, S.W.7.
C.G. Common Ground Ltd., 1A Sydney Place, London, S.W.7.
E.B. Encyclopædia Britannica Ltd., 211 Piccadilly, London, W.1.
E.C.B. E. C. Brown Trust, 220 S.W. Alder Street, Portland, Oregon, U.S.A.
E.D.V. Educational Department, Victoria, Australia.
E.S.A. Educational Supply Association Ltd., 181 High Holborn, London, W.C.1.
F.F.L. Foundation Film Library, Brooklands House, Weybridge, Surrey.
G.B.E. Gaumont British Equipments Ltd., 80–82 Regent Street, London, W.1.
M.L.I. Metropolitan Life Insurance Co., 1 Madison Avenue, New York, N.Y., U.S.A.
S.F.U. Shell Film Unit, Shell-Mex House, London, W.C.2.
T. Tampax Ltd., 110 Jermyn Street, London, S.W.1.
U.H. Unicorn Head Visual Aids Ltd., 177 The Vale, London, W.3.

FILMS

The films listed are all on 16 mm. base and are with sound track unless otherwise specified.

TITLE	SUITABLE AUDIENCE	RUNNING TIME (MINS.)	DISTRIBUTOR	COMMENTS
HEREDITY, etc.				
A Better Breed . .	S.P., O.A., A.G.	11	G.B.E.	(Selective breeding)
Heredity in Man . .	O.A., A.G.	10	G.B.E.	
Man—One Family . .	O.A., A.G.	17	C.F.L.	(Ethnological groups)
Heredity	S.G.	11	E.B	

Title	Suitable Audience	Running Time (mins.)	Distributor	Comments
Child Care				
Double Thread. . .	O.A., A.G.	33	C.F.L.	(Nursery schools)
Your Children's Sleep .	O.A., A.G.	23	C.F.L.	
Home and School . .	A.G.	20	C.F.L.	
A Flying Start . .	A.G.	11	C.F.L.	(Breastfeeding)
Your Children and You .	A.G.	28	C.F.L.	
Children Learning by Experience.	S.G.	32	C.F.L.	
Children Growing Up with Other People.	S.G.	23	C.F.L.	
Catering	S.G.	18	C.F.L.	
Nutrition				
Fundamentals of Diet .	S.P., O.A.	11	E.B.	
How to Balance Your Diet	S.P., O.A.	7	B.G.C.	(silent only)
A.B.C.D. of Health . .	S.P., O.A., A.G.	9	C.F.L.	(Vitamins ; sound or silent)
Green Food for Health .	S.P., O.A., A.G.	5	B.G.C.	
Your Children's Meals .	O.A., A.G.	14	C.F.L.	
World of Plenty . .	O.A., A.G., S.G.	46	C.F.L.	
The World is Rich . .	O.A., A.G., S.G.	36	C.F.L.	
Foods and Nutrition .	S.G.	10	E.B.	
Digestion of Foods . .	S.G.	11	E.B.	
Physical Education				
Round Figures . .	S.P., O.A., A.G.	8	C.F.L.	(Posture)
Out and About . .	O.A., A.G.	9	C.F.L.	(Youth hostels)
Children, Aged 4–6 . .	S.G.	13	G.B.E.	(sound or mute)
Children, Aged 7 . .	S.G.	10	G.B.E.	(sound or mute)
Boys, Aged 10 . .	S.G.	10	G.B.E.	(sound or mute)
Girls, Aged 11 . . .	S.G.	19	G.B.E.	(sound or mute)
Sex Education				
Sex in Life . . .	S.P., O.A.	25	C.F.L.	(Non-human animals)
Human Reproduction .	S.P., O.A., A.G.	12	C.F.L.	
Growing Girls . . .	S.P., O.A., A.G.	11	F.F.L.	
Human Growth . .	S.P., O.A., A.G.	19	E.C.B.	
Human Beginnings . .	A.G., S.G.	22	E.C.B.	
Reproduction Among Mammals.	S.G.	10	E.B.	
Safety Education				
Worth the Risk . .	O.A., A.G.	10	C.F.L.	
Playing with Fire . .	A.G.	10	C.F.L.	
No Accidents . . .	S.G.	10	C.F.L.	(Factory safety)
Special Organs				
The Eyes and their Care .	S.P., O.A., A.G.	11	E.B.	
The Teeth : Development and Care.	S.P., O.A., A.G.	11	E.B.	
Your Children's Eyes .	O.A., A.G.	19	C.F.L.	
Your Children's Ears .	O.A., A.G.	17	C.F.L.	
Your Children's Teeth .	O.A., A.G.	15	C.F.L.	
Footsteps to Beauty . .	O.A., A.G.	9	C.F.L.	
Care of the Feet . .	S.G.	12	E.B.	

Title	Suitable Audience	Running Time (mins.)	Distributor	Comments
Communicable Diseases				
A Fly About the House	J.P., S.P., O.A., A.G.	9	C.F.L.	
Breath of Danger	S.P., O.A., A.G.	9	C.F.L.	(Common cold)
Mosquito.	S.P., O.A., A.G.	11	E.B.	
Body Defences Against Disease.	O.A., A.G.	10	E.B.	
Defeat Diphtheria	O.A., A.G.	12	C.F.L.	(sound or silent)
Defeat Tuberculosis	O.A., A.G.	11	C.F.L.	
Unwanted Guests	O.A., A.G.	9	C.F.L.	(Head louse)
Subject Discussed	O.A., A.G.	15	C.F.L.	(Venereal diseases)
Polio : Diagnosis and Management.	S.G.	61	C.F.L.	
Scabies : 1946	S.G.	26	C.F.L.	(Diagnosis and treatment)
Scabies Mite	S.G.	7	C.F.L.	(Life cycle)
Malaria	S.G.	25	S.F.U.	
Public Hygiene				
Modern Dairy	J.P., S.P.	7	B.I.F.	(silent only)
Modern Bakery	J.P., S.P.	6	B.I.F.	(silent only)
The Sewer Man	J.P., S.P.	12	G.B.E.	(silent only)
Sewage Disposal	S.P., O.A., A.G.	11	G.B.E.	
Another Case of Food Poisoning.	O.A., A.G., S.G.	15	C.F.L.	
Town Rats	A.G., S.G.	16	C.F.L.	
Taken for Granted	A.G., S.G.	20	C.F.L.	(Drainage and sewage)
Housing and Town Planning				
New Town	S.P., O.A., A.G.	9	C.F.L.	
Housing Problems	O.A., A.G.	16	B.G.C.	
The Smoke Menace	O.A., A.G.	14	B.G.C.	(sound or silent)
Planning Your New Kitchen	O.A., A.G.	24	B.G.C.	
A New Kitchen	O.A., A.G.	7	B.G.C.	
Warming Up	O.A., A.G.	9	B.G.C.	(sound or silent)
A City Reborn	O.A., A.G.	23	C.F.L.	(Coventry)
Proud City	O.A., A.G.	26	C.F.L.	(London)
Healing Waters	O.A., A.G.	10	C.F.L.	(Bath)
Twenty-four Square Miles	A.G., S.G.	44	C.F.L.	(Rural area)
Health Services				
Your Very Good Health	S.P., O.A., A.G.	9	C.F.L.	(National Health Service)
A Start in Life	O.A., A.G.	22	C.F.L.	(Child health services)
Student Nurse	O.A., A.G.	34	C.F.L.	
Hospital Team.	O.A., A.G.	27	C.F.L.	
Life Blood	O.A., A.G.	11	C.F.L.	
Mass Radiography	O.A., A.G., S.G.	19 10	C.F.L.	
Blood Transfusion, 1947	A.G.	18	C.F.L.	
Here's Health	A.G., S.G.	26	C.F.L.	(National Health Service)
Blood Transfusion	S.G.	38	C.F.L.	

Title	Suitable Audience	Running Time (mins.)	Distributor	Comments
Overcoming Handicaps				
Triumph Over Deafness	A.G., S.G.	20	C.F.L.	
Victory Over Darkness	A.G., S.G.	6	C.F.L.	(Work of St. Dunstan's)
A New Beginning	A.G., S.G.	11	C.F.L.	(T.B. rehabilitation)
Back to Normal	A.G., S.G.	15	C.F.L.	(Artificial limbs)
They Live Again	A.G., S.G.	18	C.F.L.	(Injured miners)
Life Begins Again	A.G., S.G.	20	C.F.L.	(Rehabilitation of injured)
Hospital School	A.G., S.G.	11	C.F.L.	
First Steps	A.G., S.G.	10	C.F.L.	(Spastic children)
Health Pioneers				
The Story of Dr. Jenner	S.P., O.A., A.G.	11	F.F.L.	
Conquest of a Germ	O.A., A.G.	16	C.F.L.	(Sulphonamide workers)
Penicillin Discovery	O.A., A.G.	18	C.F.L.	
The Story of D.D.T.	O.A., A.G.	23	C.F.L.	
One Man's Story	O.A., A.G.	26	C.F.L.	(Dr. M'Gonigle)
Miscellaneous				
Elimination	S.P., O.A., A.G.	14	G.B.E.	
Old Wives' Tales	O.A., A.G.	8	C.F.L.	
The Centre	A.G., S.G.	23	C.F.L.	(Peckham Health Centre)
Work of the Kidneys	S.G.	10	E.B.	
Children on Trial	S.G.	61	C.F.L.	(Child delinquency)
Mechanisms of Breathing	S.G.	11	E.B.	
Heart and Circulation	S.G.	10	E.B.	
Nervous System	S.G.	11	E.B.	
Control of Body Temperature.	S.G.	11	E.B.	

Film Strips

The film strips listed are all black and white on 35 mm. base and accompanied by descriptive notes, unless otherwise specified.

Title	Suitable Audience	No. of Frames	Distributor	Comments
Nutrition				
The Food We Eat	J.P., S.P.	47	E.D.V.	
Food and Health	S.P., O.A.	37	E.S.A. for C.G.	
Carbohydrates and the Calory	S.P., O.A.	31	E.S.A. for C.G.	
Fats and Proteins	S.P., O.A.	24	E.S.A. for C.G.	
Vitamins and Mineral Salts	S.P., O.A.	33	E.S.A. for C.G.	
Physical Education				
Posture	J.P., S.P., O.A.	38	E.S.A. for C.G.	
Sex Education				
How Life is Handed On	J.P., S.P.	44	E.S.A. for C.G.	
Human Reproduction	S.P., O.A., A.G.	44	E.S.A. for C.G.	
Sex and Society	O.A., A.G.	34	E.S.A. for C.G.	
The Menstrual Cycle.	O.A., A.G.	43	T.	(colour)
Feminine Hygiene	A.G.	46	U.H.	(colour)

Title	Suitable Audience	No. of Frames	Distributor	Comments
Safety Education				
Getting On and Off the Bus	J.P., S.P.	17	E.S.A. for C.G.	
Burns and Scalds in the Home.	S.P., A.G.	42	U.H.	
Communicable Diseases				
Control of Respiratory Disease.	S.G.	48	U.H.	
Public Hygiene				
Water on Tap	J.P., S.P.	16	B.I.F.	
Water Supply	S.P.	21	B.I.F.	
Dustman.	S.P., O.A.	37	E.S.A. for C.G.	
Sewerman	S.P., O.A.	34	E.S.A. for C.G.	
Billingsgate Market	S.P., O.A., A.G.	32	E.S.A. for C.G.	(Fish)
Smithfield Market	S.P., O.A., A.G.	43	E.S.A. for C.G.	(Meat)
Covent Garden	S.P., O.A., A.G.	27	E.S.A. for C.G.	(Vegetables)
Health Services				
Hospital Sister	S.P., O.A., A.G.	33	E.S.A. for C.G.	
Health Pioneers				
Louis Pasteur	S.P., O.A., A.G.	57	M.L.I.	
Madame Curie	S.P., O.A., A.G.	75	M.L.I.	
Edward Jenner	S.P., O.A., A.G.	75	M.L.I.	
Robert Koch	S.P., O.A., A.G.	53	M.L.I.	
Florence Nightingale.	S.P., O.A., A.G.	72	M.L.I.	
Florence Nightingale.	S.P., O.A., A.G.	37	E.S.A. for C.G.	
Shaftesbury	S.P., O.A., A.G.	37	E.S.A. for C.G.	
Miscellaneous				
Elimination	S.P., O.A., A.G.	33	G.B.E.	
How to Dress	O.A.	26	E.S.A. for C.G.	

APPENDIX XI

BIBLIOGRAPHY

A COMPREHENSIVE bibliography of health education would be so extensive as to be quite inappropriate to a book of this kind. Here, however, is given a list of publications which appear to the author to warrant selection. The list is under the following heads :—

A. THE BIOLOGY OF HEALTH.
B. THE SOCIOLOGY OF HEALTH.
C. THE HISTORY OF HEALTH.
D. EDUCATION AND HEALTH.
E. TEXTBOOKS.
F. POPULAR AND CHEAP BOOKS.
G. OFFICIAL PUBLICATIONS.
H. PERIODICALS.

A. THE BIOLOGY OF HEALTH

AMIDON, E. P., BRADBURY, D. E., and DRENCKHALN, V. V. *Good Food and Nutrition* : pp. 323. Wiley. New York. Chapman and Hall. London. 1946.

A simple account suitable for adolescents and the general public.

ANDERSON, Gaylord W., and ARNSTEIN, Margaret G. *Communicable Disease Control* : pp. 434. Macmillan. New York. 1941.

Provides authoritative information about the causes, methods of spread and control of all the main communicable diseases. Despite its extremely wide scope and solid content, is easily understood by the intelligent, non-medical reader.

BANKS, H. Stanley. *The Common Infectious Diseases* : pp. 354. Arnold. London. 1949.

A compact and reliable up-to-date handbook.

BEHRMAN, Howard T., and LEVIN, Oscar L. *Your Skin and its Care* : pp. 255. Emerson. New York. 1948.

A popular account of skin health, suitable for the general adult public.

BERENBLUM, I. *Science versus Cancer* : pp. 116. Sigma Books. London. 1946.

A simple account for the layman.

BERG, Roland H. *Polio and its Problems* : pp. 174. Lippincott. Philadelphia. 1948.

A popular yet authoritative account of what is known about poliomyelitis.

BEST, C. H., and TAYLOR, N. B. *The Human Body and Its Functions* : pp. 500. Holt. New York. 1948. Chapman and Hall. London. 1949.

A reliable, thorough yet simply written physiology text, suitable for the intelligent layman.

BRECKHUS, P. J. *Your Teeth : their past, present and probable future* : pp. 255. University of Minnesota Press. Minneapolis. 1941.

A fascinating and wide-ranging account of dental development, disease and health.

BURDON, Ian M., and MACDONALD, S. *Anatomical Atlas* : pp. 58. Faber and Faber. London. 1941.

Consists mainly of a series of excellently clear, well-annotated anatomical plates, together with precise notes on the various systems of the body.

BURN, J. L. *Recent Advances in Public Health :* pp. 409. Churchill. London. 1947.

A valuable reference book over a wide range of subject matter.

CLENDENING, Logan. *The Human Body :* pp. 443. Knopf. New York. Heinemann. London. 1946.

An unusual combination of biological fact, clinical experience, wisdom, humour, clear illustrations and good writing. All educators should read it.

CRUICKSHANK, E. W. H. *Food and Nutrition :* pp. 326. Livingstone. Edinburgh. 1946.

A reliable reference book.

DACK, G. M. *Food Poisoning :* pp. 138. Chicago University Press. Chicago. Cambridge University Press. London. 1943.

An authoritative reference book.

DEUTSCH, Helene. *Psychology of Women :* Vol. 1, pp. 304 ; Vol. 2, pp. 430. Research Books. London. 1947.

A comprehensive survey of girlhood and womanhood from the standpoint of the psychoanalyst, with careful consideration for sociological facts.

DUTHIE, E. S. *Molecules against Microbes :* pp. 150. Sigma. London. 1946.

Contains structural formulæ for many drugs of importance against pathogens.

ELLIS, Richard W. B. (Editor). *Child Health and Development :* pp. 364. Churchill. London. 1947.

A most valuable collection of chapters covering the whole range of individual child development, child health and child care.

FLEMING, C. M. *Adolescence :* pp. 262. Routledge and Kegan Paul. London. 1948.

A valuable critical study of adolescence and its problems.

FRIEND, G. E. *The Schoolboy : A Study of His Nutrition, Physical Development and Health :* pp. 128. Heffer. Cambridge. 1935.

A classic study, made on the boys of Christ's Hospital, Horsham.

GESELL, Arnold. *The Embryology of Behaviour :* pp. 289. Harper. New York and London. 1945.

GESELL, Arnold. *The First Five Years of Life :* pp. 393. Methuen. London. Undated.

GESELL, Arnold, and ILG, F. L. *The Child from Five to Ten :* pp. 475. Harper. New York. Hamilton. London. 1946.

These three books constitute together a unique record of observation of child development, richly illustrated by hundreds of photographs.

HAMILTON-PATTERSON, J. L. *Anatomy and Physiology for Nurses :* pp. 174. Lewis. London. 1946.

A simple and reliable account, with many clear diagrams.

HOYMAN, H. S., *et al.* *Graphic Health Charts :* 32 charts in colour. McConnell School Map. Co. Goshen. Indiana. 1950.

An excellent set of charts dealing with the important body systems, health, first-aid and safety (with accompanying teacher's book).

ISAACS, Susan. *The Nursery Years :* pp. 138. Methuen. London. Vanguard Press. New York. 1938.

A classic study of the development and behaviour of young children.

JOE, Alexander. *The Acute Infectious Fevers :* pp. 276. Churchill. London.

A useful reference book.

KERSLEY, G. D. *The Rheumatic Diseases :* pp. 117. Heinemann. London. 1945.

A condensed yet comprehensive account, valuable for reference.

KLEITMAN, Nathaniel. *Sleep and Wakefulness :* pp. 638. University of Chicago Press. Chicago. 1939.

An encyclopædic survey of the rhythm of sleeping and waking at different ages, in different conditions, in health and disease. Although technical in parts, fascinating to read.

LE VAY, A. D. *Anatomy :* pp. 299 ; *Physiology :* pp. 209. English Universities Press. London. 1948.

Two simple texts, suited to the intelligent but non-specialist reader.

MARSHALL, C., and LAZIER, E. L. *An Introduction to Human Anatomy :* pp. 418. Saunders. Philadelphia. 1946.
A reliable introductory account.

MCLACHLAN, A. E. W. *Handbook of Diagnosis and Treatment of Venereal Disease :* pp. 371. Livingstone. Edinburgh. 1945.

MEDICAL RESEARCH COUNCIL. *Alcohol : its Action on the Human Organism :* pp. 176. H.M. Stationery Office. London. 1938.
An authoritative study, useful for reference by the teacher.

MELLANBY, Kenneth. *Human Guinea Pigs :* pp. 96. Gollancz. London. 1945.
A fascinating account of the experiments on volunteers which led to the elucidation of the problem of scabies.

OAKES, L. *A Pocket Medical Dictionary :* pp. 444. Livingstone. Edinburgh. 1949.
An excellent and handy reference book, of very small format.

RAEBURN, J. K. and H. A. *Anatomy, Physiology and Hygiene :* pp. 339. Murray. London, 1940.
A simple account, suitable for non-specialist teachers and older students.

ROBSON, J. M. *Recent Advances in Sex and Reproductive Physiology :* pp. 336. Churchill. London. 1947.
A comprehensive survey of the sex cycle in various animals (including humans), with special reference to endocrine activities, ovulation, pregnancy and parturition.

SCHEINFELD, Amram. *Women and Men :* pp. 394. Chatto and Windus. London. 1947.
A popular, yet carefully written survey of the differences between men and women in anatomy, physiology, maturation, morbidity and mental characteristics.

SCHEINFELD, Amram. *You and Heredity :* pp. 434. Chatto and Windus. London. 1939. New Edn. : pp. 616. Lippincott. Philadelphia. 1950.
A popular, yet accurate, account of human heredity. Very well illustrated.

SEARS, W. G. *Medicine for Nurses :* pp. 472. Arnold. London. 1949.
A comprehensive yet simply written book.

SMOUT, C. F. V., and MCDOWALL, R. J. S. *Anatomy and Physiology for Students of Physiotherapy :* pp. 470. Arnold. London. 1944.
An authoritative account, particularly well illustrated.

UNDERWOOD, E. A. *A Manual of Tuberculosis :* pp. 524. Livingstone. Edinburgh. 1945.
A standard work for reference.

VISCHER, A. L. *Old Age :* pp. 200. Allen and Unwin. London. 1947.
An interesting survey of the physical and mental characteristics of senescence, and their implications for the development of a satisfactory attitude towards old age.

WHILLIS, J. *Elementary Anatomy and Physiology :* pp. 342. Churchill. London. 1940.
A well-illustrated standard text.

WINSLOW, C. E. A., and HERRINGTON, L. P. *Temperature and Human Life :* pp. 272. Princeton University Press. Princeton. 1949.
A comprehensive, yet simple, account of heat metabolism in relation to clothing, ventilation, and climate.

WOOD, Frank Leighton. *What you should know about Tobacco :* pp. 147. Zondervan. Grand Rapids. 1944.
Contains some valuable material but, in view of the author's undisguised non-smoking bias, must be read critically.

ZINSSER, H., *et al. Immunity : Principles and Applications in Medicine and Public Health :* pp. 801. Macmillan. New York. 1939.
A standard work for reference.

B. The Sociology of Health

A COMMITTEE. *Maternity in Great Britain :* pp. 252. Oxford University Press. London. 1948.

A comprehensive survey of the social and economic aspects of pregnancy and childbirth, based on interviews with 14,000 women who bore children in a week in 1946.

BUTLER, Samuel. *Erewhon.* Various editions since 1872.

A satire which should be pondered on by all interested in social attitudes to health.

CREW, F. A. E. *Measurements of Public Health :* pp. 243. Oliver and Boyd. Edinburgh. 1948.

A valuable survey of vital statistics, especially those of Scotland.

ELSAS, M. J. *Housing and the Family :* pp. 136. Meridian Books. London. 1947.

Presents the results of an enquiry undertaken during 1944–45 into the relationship between dwelling accommodation and demographic changes. Contains a great wealth of statistics.

ENGELS, Frederick. *The Condition of the Working Class in England in* 1844 : pp. 300. Allen and Unwin. London. 1926 edition. (first published 1845).

A classic account, of great value in giving a general picture of the poorer people's life of the period.

GLOYNE, S. Roodhouse. *Social Aspects of Tuberculosis :* pp. 148. Faber and Faber. London. 1944.

A succinct study of tuberculosis—its causes, results, incidence and social significance. Contains some illuminating statistical tables.

GOLLAN, John. *Youth in British Industry :* pp. 344. Gollancz. London. 1937.

A most carefully documented account of the labour conditions of young people in various occupations. Contains many valuable statistics.

GRUNDY, F. *A Handbook of Social Medicine :* pp. 172. Gibbs, Bamforth. Luton. 1945.

An excellent introduction to the concepts of social medicine. Should be studied by all health educators.

GRUNDY, F. *The New Public Health :* pp. 206. Leagrave. Luton. 1949.

A re-written and extended version of *A Handbook of Social Medicine.*

MANN, Thomas. *The Magic Mountain.* Various editions since 1925.

A powerful fictional account of life in a tuberculosis sanatorium.

MARSH, Arnold. *Smoke :* pp. 298. Faber and Faber. London. 1947.

A general survey of the effects of smoke on the atmosphere, amenities and health of Britain's industrial areas.

MEAD, Margaret. *Male and Female :* pp. 477. Gollancz. London.

An invaluable survey of the influence of cultural conditions upon the development of the behaviour patterns of the sexes.

M'GONIGLE, G. C. M., and KIRBY, J. *Poverty and Public Health :* pp. 278. Gollancz. London. 1936.

An intimate study of health conditions in a depressed area.

ORR, John Boyd. *Food, Health and Income :* pp. 83. Macmillan. London. 1936.

An epochal study of the nutrition of British income groups. Contains many most instructive graphs.

ORR, J. Boyd, and WELLS, F. *Housing and Health :* pp. 32. Dent. London. 1944.

A very useful summary of the relationship between health and housing conditions.

PEARSE, Innes H., and CROCKER, Lucy H. *The Peckham Experiment :* pp. 333. Allen and Unwin. London. 1943.

An account of a pioneer health centre in London, now world-famous.

POLITICAL AND ECONOMIC PLANNING. *Population Policy in Great Britain :* pp. 227. Simpkin Marshall. London. 1948.

Contains a useful selection of vital statistics and a reasoned argument for a population policy.

RENNER, H. D. *The Origin of Food Habits* : pp. 261. Faber. London. 1944.
A fascinating (if sometimes uncritical) discussion of the physiological, psychological, æsthetic, social and educational factors influencing food habits.

RICHARDSON, Henry B. *Patients Have Families* : pp. 426. Commonwealth Fund. New York. 1945.
A study of the effect of family relationships upon the health of individuals seeking medical advice.

SIGERIST, Henry E. *Medicine and Health in the Soviet Union* : pp. 364. Citadel Press. New York. 1947.
Probably the best account available in the English language.

SIGERIST, Henry E. *Civilisation and Disease* : pp. 255. Cornell University Press. New York. 1943.
An absorbing account of the relations between disease and economics, politics, history, religion, art, literature, etc. Invaluable as a source book for teachers in the preparation of lessons on these topics. Liberally illustrated.

SIGERIST, Henry E. *Socialised Medicine in the Soviet Union* : pp. 397. Gollancz. 1937.
An authoritative account of the organisation of the public health service in the U.S.S.R., containing many valuable statistics.

TAYLOR, Stephen. *Battle for Health : A Primer of Social Medicine* : pp. 128. Nicholson and Watson. London. 1944.
Gives a general survey of the health problems of Britain, with many useful statistical tables. A model of interesting text, striking photographs and clear charts.

THOMSON, H. Hyslop. *Tuberculosis and National Health* : pp. 259. London. 1939.
Deals with tuberculosis widely, including the influence of housing, milk supply, occupation, etc.

TITMUSS, Richard and Kathleen. *Parents Revolt* : pp. 128. Secker and Warburg. London. 1942.
A semi-popular study of the problems of a declining birth-rate as it appeared at the time of puplication.

WOMEN'S GROUP ON PUBLIC WELFARE. *Our Towns : A Close-up* : pp. 143. Oxford University Press. London. 1943.
A study of the conditions of life of British town-dwellers, as exposed by the evacuation of the Second World War.

C. The History of Health

BOCCACCIO, Giovanni. *The Decameron*. Various editions since 1353.
Contains, in its Introduction, a vivid picture of the effect of plague upon social life in mediæval Italy.

CARCOPINO, Jerome. *Daily Life in Ancient Rome* : pp. 342. New Haven. 1940. Routledge. London. 1941.
Gives a clear picture of conditions in Rome at the height of its power.

CATHCART, E. P. *Communal Health* : pp. 48. Craig and Wilson. Glasgow. 1944.
Contains some valuable information about health conditions in Britain in the nineteenth century.

CELLI, Angelo. *The History of Malaria in the Roman Campagna* : pp. 226. Bale, Sons and Danielsson. London. 1933.
A comprehensive account of the conditions relating to malaria, from pre-Roman times, with exceptionally full documentation.

CHADWICK, Edwin (for Poor Law Commissioners). *Report . . . on . . . the Sanitary Condition of the Labouring Population of Great Britain* : pp. 457. H.M. Stationery Office. London. 1842.
This classic work provides an overwhelmingly powerful picture of conditions in Britain a century ago, relating to housing, drainage, water supplies, ventilation, etc. It is an invaluable source-book for reference and quotation.

CLENDENING, Logan. *Behind the Doctor :* pp. 458. Garden City. New York. Heinemann. London. 1933.
An unusually well written account of the history of discoveries of medical significance.

DEFOE, Daniel. *A Journal of the Plague Year.* Various editions since 1722.
A classic description of what plague meant in the days before the development of public health services.

DELMEGE, J. Anthony. *Towards National Health :* pp. 234. Heinemann. London. 1931.
A well-written and profusely illustrated survey of the hygienic state of England from Roman to Victorian times.

DIETZ, D. *Builders of Health :* pp. 351. Allen and Unwin. London. 1939.
An interesting account of the history of advance in medicine and public health, especially during the last century.

DRUMMOND, J. C., and WILBRAHAM, Anne. *The Englishman's Food : A History of Five Centuries of English Diet :* pp. 574. Cape. London. 1939.
A scholarly and fascinating survey, with many interesting illustrations and extracts from old records.

EDWARDS, Chilperic. *The World's Earliest Laws :* pp. 152. Watts. London. 1936 (cheap edition).
Throws some interesting light on the attitudes to medicine in ancient Babylon.

GRAY, G. W. *The Advancing Front of Science :* pp. 425. McGraw-Hill. New York and London. 1941.
An interesting account of the work of scientists (especially American) in the fight against disease.

GUTHRIE, Douglas. *A History of Medicine :* pp. 448. Nelson. London. 1945.
An invaluable work of reference which should be in the library of every health educator. Contains a useful bibliography on medical history.

GUTHRIE, Douglas. *Lord Lister : His Life and Doctrine :* pp. 128. Livingstone. Edinburgh. 1949.
A survey of Lister's life and work in the light of modern knowledge.

JONES, W. H. S. *Malaria : A Neglected Factor in the History of Greece and Rome :* pp. 109. Macmillan and Bowes. Cambridge. 1907.
A scholarly, if controversial, thesis that malaria played an important part in the downfall of the ancient world.

MARQUARDT, Martha. *Paul Ehrlich :* pp. 255. Heinemann. London. 1949.
A fully documented biography.

NEWMAN, George. *The Rise of Preventive Medicine :* pp. 270. Oxford University Press. London. 1932.
A series of lectures surveying primitive magic medicine, the medicine of the ancient middle east, Greek medicine, the Middle Ages and the Renaissance, and the rise of preventive medicine (mainly in Britain) up to the end of the nineteenth century.

SALUSBURY, G. T. *Street Life in Medieval England :* pp. 213. Pen-in-Hand. London. 1939.
Contains an interesting section on the hygienic condition of the streets.

SINGER, Charles. *A Short History of Medicine :* pp. 368. Oxford University Press. Oxford. 1928.
An excellent summary of medicine from pre-Greek times, written so as to be of interest to the general reader. Contains many most interesting contemporary illustrations.

WALKER, M. E. M. *Pioneers of Public Health :* pp. 270. Oliver and Boyd. Edinburgh. 1930.
Contains accounts of the lives and work of health pioneers from the seventeenth to the beginning of the twentieth century.

ZINSSER, Hans. *Rats, Lice and History :* pp. 301. Routledge. London. 1935.
A fascinating account of the influence of typhus and other fevers on historical events. Provides much health material for the teacher of history.

D. Education and Health

ALLEN, Raymond B. *Medical Education and the Changing Order :* pp. 142. Commonwealth Fund. New York. 1946.
A wise discussion of the ways in which the education of doctors might be improved to fit them better to be health leaders in the community.

ALLISON, Samuel D., and JOHNSON, June. *V.D. Manual for Teachers :* pp. 149. Emerson. New York. 1946.
Contains, in simple and readily available form, material to answer most of the questions which teachers are likely to be asked on this topic.

BAUER, W. W., and HULL, T. G. *Health Education of the Public :* pp. 227. Saunders. Philadelphia and London. 1937.
Contains some very practical hints on the preparation of health education material, with many diagrams and photographs.

BIBBY, Cyril. *Sex Education : A Guide for Parents, Teachers and Youth Leaders :* pp. 291. Macmillan. London. 1944. pp. 311 (adapted). Emerson. New York. 1946.
A study of the problems and methods of sex education and education for family life.

BRITISH MEDICAL ASSOCIATION. *The Training of a Doctor :* pp. 151. Butterworth. London. 1948.
A comprehensive and profound report on medical training.

BROWN, Maud A. *Teaching Health in Fargo :* pp. 142. Commonwealth Fund. New York. 1929.
An interesting and liberally illustrated account of the methods and results of a health programme in the schools of a small American town.

BROWNELL, Clifford Lee. *Principles of Health Education Applied :* pp. 366. McGraw-Hill. New York. 1949.
A thorough study of the principles and practice of health education in the American context.

BURBURY, W. Mary, and BALINT, Edna M., and YAPP, Bridget J. *An Introduction to Child Guidance :* pp. 200. Macmillan. London. 1945.
A most useful general outline of child guidance work, especially valuable for teachers and social workers.

CHILD STUDY ASSOCIATION OF AMERICA. *Parents' Questions :* pp. 286. Harper. New York. 1947. Gollancz. London. 1948.
An enlightened and sane collection of questions and answers relating to child care.

CONRAD, H. L., and MEISTER, J. F. *Teaching Procedures in Health Education :* pp. 160. Saunders. Philadelphia and London. 1938.
Gives some very suggestive specimen lesson outlines for children of various ages. Also has useful section on evaluation of results.

DALEY, W. A., and VINEY, H. *Popular Education in Public Health :* pp. 210. Lewis. London. 1927.
A pioneer study of the problems of community health education, and still one of the best available.

DE LISSA, L. *Life in the Nursery School :* pp. 339. Longmans. London. 1949.
A study of nursery school methods by an experienced author.

FOUGASSE. *A School of Purposes :* pp. 48. Methuen. London. 1946.
An essay, richly illustrated by the author's incomparable drawings, upon the principles involved in the design of successful posters for health education and other purposes.

FRAMPTON, M. E. (Ed.). *Education of the Blind :* pp. 436. World Books Yonkers-on-Hudson. 1940. Harrap. London. 1941.
A study of methods of teaching the blind, in collaboration with the staff of the New York Institute for the Education of the Blind.

GELINAS, Agnes. *Nursing and Nursing Education :* pp. 85. Commonwealth Fund. New York. 1946.
A concise discussion of the organisation of the nursing profession, of its standards, and of education for nursing.

GESELL, Arnold, and ILG, Frances L. *Infant and Child in the Culture of To-day :* pp. 399. Harper. New York and London. 1943.

A survey of the interaction between the inherent maturation process and the process of acculturation of the child, rich in its implications for toilet training, establishment of feeding habits, cleanliness education, sex education and socialisation generally.

GOODENOUGH, Sir W. (Chairman). *Report of the Inter-departmental Committee on Medical Schools :* pp. 312. H.M. Stationery Office. London. 1944.

A comprehensive survey of, and recommendations, on medical education in Britain.

GROUT, Ruth E. *Health Teaching in Schools :* pp. 320. Saunders. Philadelphia and London. 1948.

A most substantial book, providing factual information about health needs, principles upon which health education may be based, and detailed practical suggestions for health teaching.

HISCOCK, Ira V., *et al. Ways to Community Health Education :* pp. 313. Commonwealth Fund. New York. 1939.

A survey of community health education methods, profusely illustrated with material used in different parts of the U.S.A.

HOYMAN, Howard S. *Functional Health Teaching :* pp. 285. McConnell. Goschen, Indiana. 1949.

Designed as a teachers' guide to a set of health charts, this book provides an excellent summary of the facts of health, together with many teaching suggestions.

HOYMAN, Howard S. *Your Health and Personality :* pp. 180. Harcourt, Brace. New York. 1949.

An attractive health education work-book for high schools, with page references to the most widely used American texts.

KIRKENDALL, Lester A. *Sex Education on Human Relations :* pp. 351. Inor. New York. 1950.

A wise and well documented discussion of the meaning and methods of sex education.

LAMKIN, Nina B. *Health Education in Rural Schools and Communities :* pp. 209. Barnes. New York. 1946.

An account of health education experiences in communities ranging from small villages to country towns in the U.S.A. Despite national differences, the many practical suggestions should be useful in Britain.

MARTIN, S. M. *Speech Training for the Deaf Child :* pp. 114. Allen and Unwin. London. 1941.

A brief but valuable handbook.

SHARMAN, Jackson R. *Introduction to Health Education :* pp. 273. Barnes. New York. 1948.

A simply written yet carefully planned book of value to prospective and practising teachers, dealing with many aspects of the school health programme.

STEVENSON, Elizabeth. *Home and Family Life Education in Elementary Schools :* pp. 309. Wiley. New York. Chapman and Hall. London. 1946.

Although related to American conditions, British teachers will gain from this book many suggestions useful in the planning of homecraft teaching for pupils of both sexes.

STILLMAN, C. G., and CLEARY, R. C. *The Modern School :* pp. 151. Architectural Press. London. 1949.

A beautifully produced book, of interest to all who have to do with schools.

STRANG, Ruth M., and SMILEY, Dean F. *The Rôle of the Teacher in Health Education :* pp. 359. Macmillan. New York. 1941.

An enlightened and suggestive survey of the problems and possibilities of health education in the school.

SYMPOSIUM. *Parentcraft : A Handbook for Parents and Students :* pp. 248. National Association for Maternity and Child Welfare. London. 1945.

A collection of authoritative essays on most aspects of parenthood and parentcraft.

WALL, W. D. *The Adolescent Child :* pp. 206. Methuen. London. 1949.
A valuable discussion of the development and behaviour of adolescents, with suggestions for their emotional and intellectual education.
WILLIAMS, Jesse Feiring, and BROWNELL, Clifford Lee. *The Administration of Health and Physical Education :* pp. 495. Saunders. Philadelphia and London. 1947
Covers a much wider field than the title suggests, introducing into the administrative framework many valuable suggestions about health and physical education generally.
WILSON, Charles C. (Editor). *Health Education :* pp. 413. National Education Association. Washington. 1948.
The most recent edition of an invaluable guide for teachers.
WRIGHT, H. Myles, and GARDNER-MEDWIN, R. *The Design of Nursery and Elementary Schools :* pp. 120. Architectural Press. London. 1938.
A beautifully illustrated volume which, although designed for architects, could be examined profitably by all who have to do with schools.

E. TEXTBOOKS

Textbooks cannot well be selected except by the individual teacher or lecturer, but the following are recommended as worthy of examination. Appropriate ages (which will vary, of course, with the intelligence of the child or student and with other factors) are indicated in years at the left of the title.

7–9 BIBBY, Cyril. *A Healthy Day :* pp. 93. Macmillan. London. 1949.
8–10 BIBBY, Cyril. *Healthy and Happy :* pp. 135. Macmillan. London. 1948.
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CHARTERS, W. W., and SMILEY, Dean F., and STRANG, Ruth M.
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11–14 LAMONT, J. C. *Health and the Home :* pp. 64. Arnold. Leeds. Undated.
11–14 LITTLE, W. B. *Science and Health :* pp. 183. Pitman. London. Undated.
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F. Popular and Cheap Books

A substantial part of the factual knowledge needed for health education is covered by the excellent cheap volumes published by Penguin Books, Harmondsworth and Baltimore, as follows :—

CARREL, Alexis. *Man the Unknown :* pp. 312. 1948.
DREW, John. *Man, Microbe and Malady :* pp. 218. 1940.
HAMMOND, J. L. and Barbara. *The Bleak Age :* pp. 256. 1947.
HERBERT, S. Mervyn. *Britain's Health :* pp. 219. 1939.
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LAIRD, S. M. *Venereal Disease in Britain :* pp. 79. 1943.
MANN, Ida, and PIRIE, Antoinette. *The Science of Seeing :* pp. 220. 1946.
MEAD, Margaret. *Growing Up in New Guinea :* pp. 215. 1942.
MEAD, Margaret. *Coming of Age in Samoa :* pp. 185. 1943.
MOTTRAM, V. H. *The Physical Basis of Personality :* pp. 156. 1944.
NICOL, Hugh. *Microbes by the Million :* pp. 247. 1939.
RICE, Margery Spring. *Working-class Wives :* pp. 214. 1939.
SMITH, Kenneth M. *Beyond the Microscope :* pp. 143. 1943.
WALKER, Kenneth. *The Physiology of Sex :* pp. 157. 1940.
WALKER, Kenneth. *Human Physiology :* pp. 169. 1942.

A well-written series of popular books on various aspects of health is published by MacDonald, London, as follows :—

BANKOFF, George. *The Conquest of Disease : the story of penicillin :* pp. 190. 1946.
BANKOFF, George. *The Conquest of Pain : the story of anæsthesia :* pp. 204. 1946.
BANKOFF, George. *The Conquest of Tuberculosis :* pp. 187. 1946.
BANKOFF, George. *The Conquest of Cancer :* pp. 187. 1947.
BANKOFF, George. *The Conquest of the Unknown : the story of the endocrine glands :* pp. 175. 1947.
BANKOFF, George. *The Conquest of Brain Mysteries : the story of the human mind :* pp. 174. 1947

Another popular series, published by Jonathan Cape, London, and Harcourt Brace, New York, is the following :—

DE KRUIF, Paul. *Microbe Hunters :* pp. 389. 1927.
DE KRUIF, Paul. *Hunger Fighters :* pp. 348. 1929.
DE KRUIF, Paul. *Men Against Death :* pp. 349. 1933.
DE KRUIF, Paul. *The Fight for Life :* pp. 320. 1938.

The following books are also fairly inexpensive and not too technical for the general reader :—

BARNES, Kenneth C. and G. Frances. *Sex, Friendship and Marriage :* pp. 205. Allen and Unwin. London. 1938.

BIGGER, Joseph W. *Man Against Microbe :* pp. 304. English Universities Press. London. 1939.
BRERETON, F. S. *Clothing :* pp. 88. Batsford. London. 1931.
CHILD STUDY ASSOCIATION. *Parents' Questions :* pp. 284. Harper. New York. 1947. Gollancz. London. 1948.
GROVES, Ernest R. *Preparation for Marriage :* pp. 130. Emerson. New York. 1939.
ROBERTS, Harry. *The Miracle of the Human Body :* pp. 384. Odhams. London. Undated.
ROSTAND, Jean. *Adventures Before Birth :* pp. 157. Gollancz. London. 1936.

G. Official Publications

Certain governmental publications are of value in health education, sometimes for the ideas they present and more often for the facts they contain. Those listed below (published by H.M. Stationery Office, London) should be examined.

Ministry of Health

Annual Report of Chief Medical Officer.
Report of the Interdepartmental Committee on Medical Schools.
Report of the Interdepartmental Committee on Abortion.

Ministry of Education

Annual Report on the Health of the School Child.
Organised Camping.
Regulations Prescribing Standards for School Premises.
Sex Education in Schools and Youth Organisations.
Simple Health Hints.
Special Educational Treatment.
Suggestions on Health Education.
Suggestions for the Planning, Construction and Equipment of Gymnasia.
Safety Precautions in Schools.

Ministry of Food

An A.B.C. of Cookery.
Manual of Nutrition.

Ministry of Fuel and Power

Regulations and Orders relating to Safety and Health.

Ministry of Labour and National Service.

Annual Report of the Chief Inspector of Factories.
Careers for Men and Women (Dentistry, Domestic Science, Hospital Administration, Medical Auxiliary Services, Medicine and Surgery, Nursing and Midwifery Services, Optics and Orthoptics, Pharmacy, Male Nursing).
Outline Guide to Safety, Health and Welfare Museums.

Ministry of Transport

Road Accidents.
The Ship Captain's Medical Guide.

Home Office

Fire Precautions in Schools.
Report on the Psychological Treatment of Crime.

MEDICAL RESEARCH COUNCIL

The Structure of Teeth as shown by X-ray Examination.
A Comparative Study of the Seasonal Incidence of Mortality in England and Wales and in the United States of America.
Report of the Committee on Bed-bug Infestation.
Report of the Committee on Tuberculosis in Wartime.
The Epidemiology of Diphtheria during the last Forty Years.
Studies of Burns and Scalds.
An Experimental Study of Rationing.
The Personal Factor in Accidents.
Health Research in Industry.
The Relation between Illumination and Visual Efficiency.
Alcohol : its Action on the Human Organism.
A Study of Individual Children's Diet.

GENERAL REGISTER OFFICE

Annual Report of the Registrar-General.
Annual Abstract of Statistics.
Matters of Life and Death.
Quarterly Returns.
Sickness in the Population of England and Wales in 1944–47.
Statistical Review of England and Wales.

SCOTTISH OFFICE

Annual Reports of Health and Education Departments.
Chronic Rheumatic Diseases.
Congenital Deaf-mutism in Scotland.
Health and Industrial Efficiency.
Infant Mortality in Scotland.
Venereal Diseases.

Publications of a somewhat similar nature are or have been issued by other national governments, the International Labour Office, the League of Nations, the United Nations Relief and Rehabilitation Administration, the World Health Organisation, the United Nations Educational, Scientific and Cultural Organisation, etc.

H. PERIODICALS

American Journal of Public Health. Monthly. American Public Health Association. New York.
Better Health. Monthly. Hodgetts. London.
Biology and Human Affairs. Quarterly. British Social Biology Council. London.
Child Study. 8 issues yearly. Child Study Association of America. New York.
Childhood. Monthly. Lewis Publications. London.
Childhood and Youth. Quarterly. Skilton. London.
Eugenical News. Quarterly. American Eugenics Society. New York.
Eugenics Review. Quarterly. Eugenics Society and Hamish Hamilton. London.
Family Doctor. Monthly. British Medical Association. London.
Health. Quarterly. Health League of Canada. Toronto.
Health Bulletin for Teachers. Monthly. Metropolitan Life Insurance Company. New York.
Health Education Journal. Quarterly. Central Council for Health Education. London.
Health Horizon. Quarterly. National Association for the Prevention of Tuberculosis. London.

Hygeia. Monthly. American Medical Association. Chicago.
International Child Welfare Review. 4–6 issues yearly (in English, French and Spanish editions). International Union for Child Welfare. Geneva.
International Journal of Sexology. Quarterly. Pillay. Bombay. Vernon Keith. London.
Journal. 10 issues yearly. The American Association for Health, Physical Education and Recreation. Washington, D.C.
Journal of Physical Education and School Hygiene. 3 issues yearly. Ling Physical Education Association. London.
Journal of Home Economics. 10 issues yearly. American Home Economics Association. Washington, D.C.
Journal of School Health. 10 issues yearly. American School Health Association. New York.
Journal of Social Hygiene. 9 issues yearly. American Social Hygiene Association. New York.
Marriage and Family Living. Quarterly. National Council on Family Relations. Chicago.
Marriage Guidance. Monthly. Marriage Guidance Council. London.
Mental Health. 3 issues yearly. National Council for Mental Health. London.
Mental Hygiene. Quarterly. National Committee for Mental Hygiene. New York.
Mother and Child. Monthly. National Baby Welfare Council. London.
Nutrition and Child Welfare. Monthly. Nutrition Publications. London.
Safety Education. 9 issues yearly. National Safety Council. Chicago.
Safety News. Monthly. Royal Society for Prevention of Accidents. London.
The World's Children. Monthly. Save the Children Fund. London.
Vision. Thrice yearly. Association of Optical Practitioners. London.

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INDEX

N.B.—This index refers only to the main body of the text, not to the appendices.

ABDOMINAL ORGANS, 27
abnormalities, 18
accidents, 38, 65, 72, 81, 83, 111, see also *safety*
accommodation, 41
acting, 72
actors, 120
administrators, 89, 90, 92
adolescence, 10, 14, 22, 81, 96, 113, 114
adults, 92, 117
adventure, 72
advertisements, 50
æsthetics, 5, 28, 80
aggressiveness, 44
agglutinin, 31
agility, 27
aids, auditory, 21
  mechanical, 54
  visual, 51, 82, 91, 105, 110, 114, 120
air, fresh, 30, 73, 88, 111, see also *ventilation*
  night, 30
air-borne infection, see *diseases, air-borne*
alcohol, 26, 81, 117, see also *beer, drinking*
ale, 26, see also *alcohol*
allergies, 19
amœbic dysentery, 31
anæmia, 3, 24, 29, 88
analogies, false, 74
anniversaries, 113
anopheline mosquito, 32
ante-natal clinic, 49
antibody, 31
antidotes, 79
antiseptic, 65
antitoxin, 31
anvil, 43
aphasia, 88
appearance, pride in, 10, 84
appetite, 24, 27
appreciations, 7, 15
aqueous humour, 40
arcade, health, 54
arm circumference, 19
ascorbic acid, 24
assessment, see *evaluation*
assimilation, 29
assimilatory mechanisms, 19
associations, parent-teacher, 91
  professional, 110, 113
assumptions, 8, 57, 65, 71, 77
asthma, 44
astigmatism, 41
athlete's foot, 31
  heart, 27
attack by disease, 13, see also *diseases*
attitudes, 14, 65, 77, 79
attractiveness, 117
auditory aids, 21
aurotherapy, 35
authorities, local, 82, 92, 115
auto-erotism, 22, see also *masturbation*

BACILLARY DYSENTERY, 32
bacteria, 31, 83, 84, see also *germs*
bacterial food poisoning, 32
balance, 43
bar tenders, 120
barristers, 120
barrow boys, 120
basal metabolic rate, 19
bathing, 10, 116
bed wetting, 43
beer, 17, 26, see also *alcohol*
behaviour, 94, 116
beriberi, 23, 24
beverages, see *alcohol, coffee, milk, tea, water*
binocular vision, 42
biologists, 94
biology, 78
  human, 79
blackcurrant, 24
blind pupils, 87
blindness, 41
blood, 27
blood corpuscles, sickle-shaped, 18
blue sclerotics, 18
bodily contact, 22
boils, 31
bones, 24, 30, 65
bovine tuberculosis, 32, see also *tuberculosis*
bow legs, 28
boxing, 43
boy scouts, 113, 114
boy-girl friendships, 22, 115
brachydactyly, 18
brain, 19, 26
bread, 23, 65
breast feeding, 32, 58

brightness, 111
British Institute of Public Opinion, 106
brittle bones, 18
bronchitis, 120
bronchopneumonia, 111
bulletins, 85
burns, 38
butter, 23

CAFFEINE, 25
calcium, 24, 39
calories, 23
campaigns, local health, 110
  military, 80
  national health, 108
cancer, 2, 35, 121
carbohydrates, 23
carbon dioxide, 30
cards, greeting, 112
caretakers, 38, 68, 83
caries, 24
carotin, 23
case study approach, 12
cement, 38
central planning, 108
cereals, 24
charades, 85
charts, 49, 99, see also *posters*
cheese, 23, 65
chemical washes, 121
chemist, 79
chest depth, 19
chewing, 39, 75
chicken pox, 31, 33, 76
child, 113, 118
  development, 81, 91, 117
children's questions, 64
chimney sweeps, 120
cholera, 1, 2, 32, 36
chorea, 35
choroid, 39
Christmas, 113
chromosomes, 17
cigarettes, 17, see also *nicotine, smoking*
ciliary muscle, 39
cirrhosis, 120
citrous fruits, 24
civil servants, 108
classroom, 36, 71, 83
clay workers, 120
cleanliness, 15, 33, 58, 62, 66, 71, 76, 78, 80, 94, 96
  education, 76
clergymen, 90, 100, 102
Cleveland Health Museum, 54
clinics, 49, 52, 82, 91, 112, 119
cloakrooms, 71, 81
closets, 37
clothes, 30, 73, 78, 79, 81, 112
cochlea, 43
cod-liver oil, 65
coffee, 25, 75
colds, 30, 33, 71, 101, 107
colour, 36
  blindness, 18
college, 11, 90, 94
  health programme, 99
colleges, adult education, 92
  deficiencies of, 94
  teachers' training, 92
committees, 68
communal feeding, 32
community health education, 117
competitive athletics, 28
compulsory registration, 6
cones, 40
confidence, 44
congenital defects, 19
conjunctiva, 39
conjunctivitis, 40
conscience, 22
consistency, 60, 63, 82
constipation, 3, 61
contact infection, 32
contraception, 103, 117, 119
co-operation, 13, 74, 78, 82, 83, 87
Co-operative Guilds, 43, 119
co-operative study, 122
co-operativeness, 21
cornea, 39
correlation, 77
costermonger, 120
cotton workers, 120, 121
coughing, 26, 33, 62, 65
coughs, 96, 101, 107
county colleges, 112, 114
courage, 21
cretinism, 44
critical examination, 93
  judgment, 115
crockery, dirty, 33
cultural pattern, 58
curriculum building, 69, see also *school curriculum*
  subjects of, 77 *et seq.*
cutlery grinders, 120

DARK VISION, 23, 41
deaf mutism, 18
deaf pupils, 87
deafness, 19, 43
death rate, 1
decorators, 120
defaecation, 22, 94
defects, congenital, 19
delicate pupils, 8
dental decay, 24
  health, see *gums, teeth*

dental inspection, 71
dentine, 38
dentists, 39, 92
depressants, 26, see also *alcohol*
design, 80
detergents, 79
development and growth, see *growth and development*
diabetes insipidus, 18
  mellitus, 18
diabetic pupils, 88
diarrhœa, 32, 33
diathermy, 35
diet, 23, 88
dietary habits, 23
digestion, 24, 29, 75
digestive diseases, 3, 32, 101, 120
dining room, 91
diphtheria, 31, 33
discretion, 97
discrimination, 83, 85
discussions, 120
disease, indications of, 33
diseases, air-borne, 33, 71, 76, 111
  communicable, 32, 67, 83, 84, 91, 111
  contact, 32
  digestive, 3, 32, 101, 120
  food-borne, 32, 36
  gastro-intestinal, 24, 32, 111, see also *digestive diseases*
  heart, 18, 35
  liver, 120
  nutritional, 23
  occupational, 120
  respiratory, 2, 11, 30, 36, 120
  skin, 24, 30, 31, 32, 44, 120
  spread of, 32, 73, 78
  vector-borne, 32, 36, 66, 76, 111
  venereal, 32, 108, see also *gonorrhœa, syphilis*
dishonesty, intellectual, 17, 26, 116
dock workers, 120
doctors, 48, 85, 87, 89, 90, 94, 100, 102, 104
  training of, 100
dogmatism, 73
domestic heating, 79
  hygiene, 112
dominant characters, 18
drama, 80
drawing, 72
drinking, 41
  cups, 62
  water, 24
droplets, 33
drowning, 38
drunkenness, 26, 42
  dust, 33, 38
dysentery, amœbic, 31
  bacillary, 32
EAR, 3, 43, 79
  defects of, 43
eating, 9, see also *food, nutrition*
  habits, 114
ecology, human, 79
education for parenthood, 118, see also *parentcraft*
  Ministry of, 82
educationally subnormal pupils, 88
efficiency, industrial, 4
eggs, 23, 24
electricity, 66, 79
elimination, 9, 30, 75, 79
emotional difficulties, 29
  frustration, 22, 43
employers, 92, 110, 114
enamel, 38
endocrine secretions, 18, 19, 24
enuresis, 43
environment, 9, 17, 19, 27, 47, 57, 70, 71, 76, 81, 82, 83, 94
  college, 94
  home, 47, 57, 70, 76
  pre-natal, 19
  school, 9, 37, 47, 81, 82, 83
epileptic pupils, 87
ethics, 80
excretory mechanism, 19
exercise, 11, 27, 29, 62, 72, 73, 78, 112
exhibitions, 114, 120
expectation of life, 1
exposure, 35
eugenics, 79
eustachian tube, 43
evaluation, 67, 110
evening lectures, 118
evolution, 79
eye, 3, 11, 20, 29, 39, 42, 72
  control of, 20
  defects of, 3
eyeache, 42

FACTORIES, 120
fæces, 9
false analogies, 74, see also *intellectual dishonesty*
family health, 95, 116
  life, 81, 91, 103, 118
  planning, 103, 117, 119
fatigue, 25, 27, 29, 31, 42, see also *rest*
fats, 23
fears, 23
feeding, 33, 58, see also *food*
fenestra, 43
fertility, 24
fibrositis, 35
films, 51, 82, 91, 105, 114, 120
film-strips, 52, 99
fish, 23
  liver oils, 23

flabbiness, 27
flies, 32, 66, 76, 111
flirtation, 22, 115
fluorine, 24, 39
flushing, 33
focal length, 41
food, 79, 106, 111, 112, see also *eating, nutrition*
  education, 25, 78
  fads, 61
  preferences, 60
  purity of, 6
  servers, 120
food-borne infection, 32, 36
fresh air, 30, 73, 88, 111, see also *ventilation*
fruits, 24, 25
frustration, 22, 43
fungi, 31

GARBAGE, 76
gas, 66
gastro-intestinal diseases, 24, 32,111, see also *digestive diseases*
general public, 105
generosity, 11, 21, 44
genes, 17
genetics, 18
geography, 80
German measles, 19, 31
germs, 65, 76, see also *bacteria, protozoa, viruses*
girl guides, 113, 114
gland, pituitary, 19
  thyroid, 19, 24
glands, endocrine, 18, 19, 24
gonads, 19
gonorrhœa, 31, 32, 105
gout, 35
government, local, 82, 92, 110, 115
  national, 108
greetings cards, 112
growth and development, 19, 23, 27, 78, 95
  individuality of, 19
  measurement of, 19
guilt, 23
gums, 24, 39

HABITS, 7, 9, 10, 11, 12, 23, 58, 71, 77
hæmoglobin, 24
hæmolytic streptococcus, 35
hæmophilia, 18
hair, care of, 17, 73
hammer, 43
handicapped pupils, 67, 87
handkerchief, 8, see also *clothing, coughs, sneezes*
hands, washing, see *cleanliness*
handwork, 80
happiness, 21, 111, see also *mental health*
headache, 42
Health Centre, Pioneer, 2
  dental, see *gums, teeth*
  desirability of, 3
  education, 121, 122
    aspects of 70 *et seq.*
    lecturer, 93, 98
    media of, 46 *et seq.*
    specialists, 96, 121
    workroom, 99
  meaning of, 2
  mental, 30, 44, 72, 79
  Ministry of, 1, 106
  oral, see *gums, teeth*
  positive, 3, 101
  principles, not rules, 13
  surveys, 11, 106
  visitors, 49, 93, 102, 119
  weeks, 110
  workers, 85
    training of, 100
healthy persons, characteristics of, 3
heart, 19, 26
  disease, 2, 18, 120
height, 14
helpfulness, 11
heredity, 5, 13, 17 *et seq.*, 39, 93, 95
hip width, 19
history, 80
hollow back, 28
home, 57, 66, 70
homecraft, 80, see also *parentcraft*
honesty, 11, 44, 116
hookworm, 31
housefly, 32, 66, 76, 111
housing conditions, 6, 30, 36
human ecology, 79
  relations, 99
humans, nature of, 7
humidity, 30, 36
Huntington's chorea, 18
hydrotherapy, 35
hygienic ritual, 14, 107
hypermetropia, 41
hypocrisy, 25, see also *intellectual dishonesty*

IDEALS, 14, 65, 77, 116
idiocy, juvenile amaurotic, 18
  mongolian, 19
idiosyncrasies, 19, 28, 45 56, 60, 63, 65, 78, 119
ignorance, 17
ill-health, cost of, 4
illumination, 38, 80, 94, 96
imagination, 20

immunisation, 31, 33
immunity, 18, 30, 34
impetigo, 31, 32
incentives, 9, 66
industrial efficiency, 4
  revolution, 1
infancy, 10, 22, 44
infantile diarrhœa, 32
  paralysis, 2, 31, 34, 111
infection, see *bacteria, disease, germs, protozoa, viruses*
infestation, 36
influenza, 31, 33, 71, 101, 111
information, 13, 73
infra-red, 79
initiative, 113
injuries, 66, 78, see also *safety*
insects, 31, see also *housefly, mosquito, louse*
inspection, medical, 67
integration, curriculum, 77, 94
integrity, intellectual, 74
intellectual dishonesty, 17, 26, 116
intelligence, 19, 20, 21, 89
  measurement of, 21
  quotient, 21
instruction, 64, 65, 70
intolerance, 21
intoxication, 26, 42
iodine, 24
iris, 39
iron, 24

JOURNALISM, 91
juvenile amaurotic idiocy, 18
  organisations, 114

KINDNESS, 21
knock-knees, 28

LACTIC ACID, 29
language, development of, 21
  simplicity of, 48
lavatories, 71, 81
laxatives, 61
lead poisoning, 120
leaflets, 49, see also *pamphlets*
lecturers, 92
lens, 39
lice, 32, 106
ligaments, 28
lighting, 36, 80, 94, 96
literature, 80
liver disease, 120
Liverpool, 1
local authorities, 82, 92, 115
  government officers, 110
local health campaigns, 110
  planning, 110
long sight, 41
lordosis, 28
louse, 32, 106
lousiness, 31, 106
lung expansion, 28

MACULA, 40
maladjustment, 89, see also *frustration*
malaria, 31, 32
malnutrition, 31, 62
malposture, 28, 42
management, 120
marriage guidance, 101, 102, 117
Mass-Observation, 106
mass radiography, 33, 98
masturbation, 32, 115, see also *autoerotism*
maternity and child welfare, 6, 49
mathematics, 80
matron, 98
maturation, 90, 91, see also *growth and development*
meals, school, 83
measles, 2, 31, 33, 76, 111
measurement of intelligence, 21
  of physique, 19
meat, 23, 65
mechanical aids, 54
mechanics, 79
media of health education, 31, 33, 46, 95, 102
medical examination, 67
  practitioner, 48, 85, 87, 89, 90, 94, 100, 102, 108
  students, 101
memory, 20
meningitis, 33
menopause, 23
men's clubs, 117
mental age, 21
  habits, 11
  health, 30, 44, 72, 79
  illness, 2
menstruation, 23
metabolic rate, basal, 19
metal workers, 121
microcephaly, 18
micro-organisms, see *bacteria, germs, protozoa, viruses*
middle-aged, 119
midwives, 102
military campaigns, 80
milk, 13, 23, 24, 32, 33, 39, 65, 73, 75
mineral salts, 24
mineralisation, 20
Ministry of Education, 82
  of Food, 106

Ministry of Health, 1, 106
minor injuries, 101
mites, 31
modelling, 72
models, 99
mongolian idiocy, 19
monogamy, 33
monotony, 32
morbidity, 44, 76
  statistics, 70
mosquitoes, 32
mothers, 118
motivation, 28, 95
motor co-ordination, 10
  skills, 20, 63, 80
  vehicles, 38
movement, 79, 80
mucous membranes, 23
mumps, 31, 33
muscles, 19, 27, 28, 65
muscular atrophy, 18
museum, Cleveland health, 54
museums, 111
mutation, 18
myopia, 41
myths, 17, 22, 96, 107

NAILS, 117
nakedness, 57
napkins, sanitary, 82
naso-pharynx, 43
national health campaigns, 108
natural units, 119
nature and nurture, 17 *et seq.*
neck, 33
necking, 22, 115
nephritis, 120
neuralgia, 3
neuritis, 24
neuromuscular skills, 20, 63, 80
neurotic illnesses, 119
nervous control, 79
  health, 24
  strain, 27, 42
  system, 18, 25, 79
nervousness, 21
newspapers, 50, see also *press*
nicotine, 26, see also *cigarettes, smoking*
nicotinic acid, 24
night air, 30
noise, 29, 36, 79
normal personalities, 21
nucleus, 17
nursery school, 8, 114
nurses, 83, 89, 90, 98, 100, 102
nutrition, 19, 23, 73, 81, 96
  education, 25, 75
nutritional disease, 23
nystagmus, 18

OBEDIENCE, 65
occupational diseases, 120
  grouping, 120
old wives' tales, 23, 105
open-air schools, 88
optic nerve, 41
optics, 79
oral health, see *gums, teeth*
organisations, juvenile, 114
  professional, 110, 113
  voluntary, 92
  youth, 114
osteoarthritis, 35
ovum, 17
oxygen, 28, 30

PAINTERS, 120
painting, 72
pamphlets, 49, 99, 105
paper towels, 82
paralysis, infantile, 2, 31, 34, 111
paratyphoid, 2
parentcraft, 8, 81, 117, 118
parents, 13, 56, 65, 68, 89, 90, 91, 95, 119, 120
parent-teacher association, 91
partially deaf pupils, 88
partially sighted pupils, 88
pasteurisation, 33
pathogens, 32
pathological minutiæ, 101
pathology, 10, 14
Peckham health centre, 2
pediculosis, 31, 106
pellagra, 24
pelvis, 27
perceptions, 20
persistence, 44
persistent coughing, 33
personality, 19, 21, 51, 90, 108
perspiration, 30, 79
pets, animals, 73
petting, 22, 115
phosphorus, 24
physical attractiveness, 117
  education, 78, 96
  educationist, 94
physically handicapped pupils, 88
physicians, 48, 85, 87, 89, 90, 94, 100, 102, 108
physics, 79
Pioneer Health Centre, 2
pioneers, health, 73
pituitary gland, 19
planning, 71, 77, 98, 108, 110, 111
planning, central, 108
  family, 103, 117, 119
  local, 110
  seasonal, 111
play, 8, 62

plays, 85
plumbers, 120
pneumonia, 33, 120
poise, 78
poisons, 79
poliomyelitis, 2, 31, 34, 111
polydactyly, 18
poor law, 1
positive health, 3, 101
posters, 49, 85, 99, 105, see also *charts*
postural defects, 28, 42
posture, 12, 14, 28, 79, 80, 93, 114
potato, 23, 65
pottery workers, 120
pre-adolescence, 19
precept and practice, 98
pregnancy, 19, 118
prejudice, 107
pre-marital sex experience, 115
pre-natal environment, 19
presbyopia, 41
press, 82, 85, 105, see also *newspapers*
pride in appearance, 10, 84
primary school, 71
professional association, 110, 113
programme, planning of, 71, 77, 98, 108
projects, 71
protein, 23
protozoa, 31, see also *germs*
prunes, 61
psychiatrist, 87
psychologist, 87, 89
Public Opinion, British Institute of, 106
publicans, 120
publicist, 108
pulp, 38
pulses, 23, 24
pupils, records of, 12
pure water, 6
pyridoxine, 24

QUESTIONS, CHILDREN'S, 65
quizzes, 120

RADIO, 52, 63, 82, 91, 105
rats, 1, 32
reason, 7
recessive characters, 18
record system, 12
recreation, 111, 119
reflexes, 9
refractive errors, 41
refresher courses, 104
refuse, disposal of, 76
registrars, 103
regularity, 72
relaxation, 11, 78, see also *rest*
relevance of teaching, 85
  seasonal, 111
religious instruction, 80
  workers, training of, 102
remoteness, 100
resilence, 44
respiratory diseases, 2, 11, 30, 36, 120
rest, 8, 25, 27, 29, 63, 72, 73, 88, 112, see also *relaxation*, *sleep*
retina, 40
rheumatic arthritis, 35
  fever, 35, 36
  heart disease, 35
rheumatism, 35, 101
rhythm, 8, 57
riboflavin, 24
rickets, 23, 24
ringworm, 31
ritual, hygienic, 14, 107
rods, 40
rose hip syrup, 34
rotary, 119
roughage, 61
running nose, 33

SAFETY, 66
  education, 38, 63, 72, 111
salad, 65
salicylates, 35
sanitary napkins, 82
  towels, 82
scabies, 31, 32
scarlet fever, 2, 31, 32
scavenging, 1
scepticism, 11, 42, 78, 85
school, building and equipment of, 9, 37, 71, 81, 82, 83
  caretaker, 38, 68, 83
  curriculum, 78, 87, 95
  doctor, 68
  health programme of, 67 95, 112
  lunches, 83
  nursery, 8, 114
  open air, 88
  primary, 71 *et seq.*
  routine of, 72, 83, 95
  secondary, 77 *et seq.*
  special, 67
  visits, 82, 87
  visitors to, 67
scleroid, 39
scrapbook, 85
scurvy, 23, 24
seasonal relevance, 111
secondary school, 77 *et seq.*
security, 57, 72
self-confidence, 21, 29, 72
self-discipline, 44, 116

self-expression, 72
self-medication, 14, 107
self-restraint, 72, 78
selfishness, 21
semicircular cards, 43
sensations, 22
sense perceptions, 20
sentiments, 7
serum, 31
sewage, 1, 5, 6, 32
  farms, 82
sex, 21, 105, 114
  attitude to, 14
  difficulties in marriage, 101
  education, 14, 80
  prejudice, 107
  problems, 96
  relations, 103, 115, 117
sex-linked characters, 18
sexual intercourse, 9
  maturation, 19
shell tube, 43
shop stewards, 116
short sight, 41
sight, 20, 42
skeletal maturity, 20
skills, 20, 63, 80
skin, 65, 73, 117
  afflictions, 120
  health, 24
  infections, 30
  lesions, 24
  rashes, 44
sleep, 13, 29, 53, 62, 74, 117, see also *rest*
sleeping sickness, 31
smallpox, 2, 33
smoking, 26, 41, 65
sneezing, 33, 62, 65, 73, 76, 84, 103, 107, 109
social conscience, 84
  groupings, 113
  health, 116
  studies, 80
  surveys, 108, 109, 110, 111
  units, 119
  workers, 87, 100
    training of, 102
society, 72
sociologists, 108
sociology, 39
solitude, 72
sound, 79
soya flour, 23
spasms, 42
speakers, 109, 114, 119
special classes, 20
special educational treatment, 87
  schools, 87
specialist, health education, 96, 121
spectacles, 79
speech, 43
speech defects, 88
  therapy, 88
spermatozoon, 17
spitting, 33, 105
spoken word, 48
spontaneity, 71, 72, 115
sports club, 113
spray-borne diseases, 33, 71, 76, 111
spread of infection, 32, 73, 78
squint, 42
stamina, 27
stammering, 43
statistics, 1, 2, 13, 38, 70, 98
stature, 14
stimulants, 25
stirrup, 43
stomach troubles, 26
stone masons, 120
strain, nervous, 27
students, education, 92 *et seq.*
  medical, 101
  problems of, 95
  selection of, 93
subcutaneous tissues, 19
subclinical infection, 34
sub-health, 107
suckling, 22
suffocation, 38
superstitions, 96
sunshine, 24, 30, 73, 88
surveys, 102, 109, 110, 111
sugar, 26
susceptibility, 18, 29
sweat, 30, 79
swimming, 43
syndactyly, 18
syphilis, 31, 32, 105

TACT, 94
tapeworm, 31
tea, 25, 65, 75
teachers, 13, 56, 67, 68, 71, 82, 85, 87 89, 90, 92, 108
  certificate, 96
  selection of, 93
  training of, 92 *et seq.*
tear glands, 40
techniques, 95
teeth, 3, 8, 10, 24, 30, 38, 65, 70, 73, 75, 76, 109, 116, 117
television, 54
temper tantrums, 43
temperance, 27, 116
temperature, 36
theory, practice and, 82
thiamin, 24
throat soreness, 32
thyroid gland, 19, 24
tiredness, 25, 27, 29, 31, 42, see also *rest*

tissues, growth of, 19
tobacco, 26, 116
toilet training, 54. 76
tolerance, 21
tomato, 24
towels, paper, 82
  sanitary, 82
toxin, 31
toxin-antitoxin, 31
toxoid, 31
trade union officials, 92
trades council, 113
training, 90, 93
  physical, 78, 96
tuberculosis, 2, 30, 31, 33, 36, 99, 120
turnip, 24
twitches, 43
tympanum, 43
typhoid, 2, 32, 111
typhus, 2, 31, 32

ULTRA-VIOLET, 39
unhealthy habits, 105
urinary disorders, 18
urine, 9
utopianism, 77, 85, 106

VACATION COURSES, 104
vaccination, 1, 31, 33
varicose veins, 3
variety, 72
vector-borne infection, 32, 36, 66, 76, 111
veins, varicose, 3
vegetables, 23, 24
venereal diseases, 31, 32, 105, 108, see also *gonorrhœa, syphilis*
ventilation, 29, 30, 36, 79, 80, 94, 112
verbal factor, 21
verbalisation, 21
vigour, 78
viruses, 31, 34, 35, see also *germs*
visits, school, 82
visual aids, 51, 82, 91, 105, 110, 114, 120
  purple, 40
vital statistics, 1, 2, 13, 70, 80, 98
vitamins, 23, 24, 26, 35, 40, 41, 61
vitamin A, 23, 40
  B, 23, 24, 26, 41, 61
  C, 24, 40
  D, 24, 30
  E, 24
vitreous humour, 40
vocabulary, 65
voiding, 9, 75
voluntary organisations, 92
vomiting, 33

WAITERS, 120
waiting rooms, 50
wall newspapers, 85, 99
warmth, 30
water, 79
  supply, 24, 32
  works, 82
weaning, 58
weight, 14
wheat germ, 24
whole grain, 24
whooping cough, 2, 33, 96, 111
women's clubs, 113
  institutes, 119
woodcraft folk, 114
words, choice of, 65
work place, health education in, 120
workers, 110, 120
wrapped foods, 33

XEROPHTHALMIA, 41

YEAST PRODUCTS, 24
yellow fever, 31
youth leaders, 90, 92
  organisations, 113, 114, 115